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ABSTRACT

The basic goal of the program will be the development of the full potential of each child. The program also seeks an increase of parental awareness and understanding of the values of education and the parents' responsibility for their children's education. The town of Brookhaven seeks to mobilize all community resources, services, and facilities to the end of accomplishing the goals and objectives of this project. The goals of the proposed curriculum are: to help each child develop a positive self image, and encourage in each child the foundation for independent thought and action; to develop in each child an awareness and understanding of his environment; to improve communication skills, perceptual awareness, and motor coordination, increasing the level of each child's readiness for school achievement and participation in community activities; to develop in each child the ability to think quantitatively; to understand the structure of the number system and the logic of arithmetic operations; to foster aesthetic values through experiences in art and music; and, to promote good health in the children and encourage physical development. Practical life experiences must be provided for the child whose home may be lacking in the equipment, materials, or tools he will encounter outside that home. They involve all of the operations necessary for keeping the classroom and equipment in good working order. (Author/JM)

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A Centenary for Montessori

SINCE 1970 marks the one hundredth anniversary of the birth of Maria Montessori, it is appropriate to take a close look at her tremendous influence, not only in special education, but in the education of all children, everywhere. Although she drew many of her concepts from Itard and Seguin, she went further and augmented them by developing unique educational apparatus and in using these materials in a systematic way.

This practical influence alone, and in itself, would be worth remembering, but Montessori's major impact was in the realm of ideas. She was, for example, the first professional to note that the educational problems of children with severe learning dysfunction did not only have medical counterparts, but that these disorders were dynamic — not static — and with the proper educational methodology, improvement was indeed possible. Today, in the ever-expanding awareness of learning disabilities, this positive cornerstone has proved to be true. Again, by providing an entire philosophy of self-realization through meaningful work plus developing the actual didactic materials through which this philosophy could be made operative, Montessori gave special education, and education in general, the scope and direction it continues to follow today.

Montessori's entire life was one of acknowledging problems and challenging them for answers. Born in Chiaravalle, Italy, in 1870, she decided, as a child mathematics prodigy, to become a doctor — an unheard of choice for a young lady at that time. It was only through persistance and persuasion, so characteristic of her nature, that she was permitted to enter the Medical School of the University of Rome. When she graduated at the age of twenty-six, she had not only won the admiration of her professors and colleagues, but received a double honors degree.

After initiating her medical practice, Montessori became interested in the problems of educating severely retarded children. Again, through persistence, she was able to develop a program for these children, the success of which led her to apply the basic principles of therapeutic education to a class of normal children. The voluntary intellectual occupation and the emotional balance, which Montessori discovered in the retarded children she had observed and assisted in a prepared environment of sensorial materials (that rendered abstract knowledge comprehensible to the child's mind and hands), convinced her that the educational principles of freedom of choice and movement, and individual active learning answered the needs of all children.

The results of Montessori's experiment of making the normal learner the center of education and devising and adapting a curriculum according to his interests and needs, were that children who had formerly been forced to study began to concentrate with enthusiasm and to achieve real and profound understanding in the scope of their studies. In addition, their intellectual achievements were always accompanied by emotional growth; moreover, the enlargement of consciousness seemed to lead directly to the growth of moral awareness. The children became harmonious and balanced in their movements, self-sufficient in their work, and honest and helpful with one another.

As Montessori worked with, and observed children, she discovered that there were successive, natural phases of growth, each with characteristic sensitivities that guided the child's physical and mental development. These phases she called "sensitive periods." She learned that these periods were outwardly recognizable by the intense interest the child showed for certain sensorial or abstract experiences. She inferred, therefore, that these guiding sensitivities constitute needs in the child that demand fulfillment. She found that she could satisfy the young child's intellectual curiosity by introducing him to scientific and cultural subjects normally reserved for secondary school: physics, chemistry, biology, and the fundamentals of history, literature, and music. Observing the unity of the child's interest, Montessori understood that the subjects must not be taught separately, and, furthermore, that the teacher himself must conceive of the relations between the subjects so that he can organize them around the child's vital interests: to understand the nature of the physical environment, and to understand the workings of human society.

Now, one hundred years after the birth of the Dotoressa, and eighteen years following her death, educators are aware of her phenomenal impact on education, for much of that which she introduced is now accepted throughout the world, and has aided in understanding the unfolding of learning in children and the ways by which we who teach them may better help them.

This year, a number of Montessori centennial celebrations are being held throughout the world. We join in saluting and paying homage to this remarkable woman and beloved educator.

— LENA L. GITTER

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A STRATEGY
FOR FIGHTING
THE WAR ON POVERTY

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(THE MONTESSORI METHOD AS APPLIED TO THE BROOKHAVEN PROJECT)

UD011984

BY

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PREFACE

More than fifty years ago Maria Montessori opened her first Children's House in the Roman slum of San Lorenzo, and she discovered that the terrible poverty of her children concealed riches that were developed through her educational techniques.

She herself wrote, in Education for a New World,[1] the following summary of her discoveries. "The circumstances which favoured the first experiment were mainly three:

"1. Extreme poverty and a social condition of much difficulty. The child who is very poor may suffer physically from lack of food, but he finds himself in natural conditions, and so has inner wealth.

"2. The parents of these children were illiterate, so could not give them unwise help.

"3. The teachers were not professional teachers, so were free from the pedagogic prejudices induced by training on the usual lines. In America experiments had never succeeded because they looked for the best teachers, and a good teacher meant one who had studied all the things that do not help the child, and was full of ideas which were opposed to the child's freedom. The imposition of the teacher on the child can only hinder him. One must take simple people, and make use of them, and as to poverty, one need not impose it but must not be frightened of it, as it is a highly spiritual condition. If we want an easy experiment with sure success, we should go to work among poor children, offering them an environment which they do not possess. An object scientifically constructed is taken with passionate interest by the child who has had nothing, and it awakens in him mental concentration."

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[1] Maria Montessori, Education for a New World (Adyar, Madras, India: Kalakshetra Co., 1959).

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The Program

The basic goal of the program will be the development of the full potential of each child. The program also seeks an increase of parental awareness and understanding of the values of education and the parents' responsibility for their children's education.

The Town of Brookhaven seeks to mobilize all community resources, services and facilities to the end of accomplishing the goals and attaining the objectives of this Project.

THE VITAL CONTEXT

It is possible to develop programs aimed at teaching art or working with the exercises of practical life without utilizing them fully. It is possible to train teachers with surface techniques, yet no grasp of the underlying unity of disparate exercises. What is needed for the flowering of our program is a vital context within which each daily activity finds its place and contributes to the growth of the child.

Such a context can be found in the work of Maria Montessori. The results of her experiment with teaching retarded children were so remarkable that she applied her observations and techniques to normal slum children, and finally, her methods are gaining wide acceptance among American parents from well-to-do backgrounds.

Montessori did not begin by setting certain "culturally desirable" goals or by using standard achievement or IQ tests, but by observing the biological and psychological development of children and building on the various natural aptitudes for learning that presented themselves at various periods in a child's developing life. These she called the "sensitive periods," and she discovered that, by cooperating with these periods, the teacher (or "directress" in Montessori terminology, since she is much more passive and absent than is a teacher in a conventional classroom) can awaken a thirst for knowledge and beauty in the child that leads to remarkable achievements at an early age.

But Montessori went further as her work developed. She was not interested in training mental athletes for a competitive game. Many Montessori-trained children do read and write at four or five, do learn geometry at five or six, but the aim of Montessori was not to turn out prodigies--nor did she--but children who could grow into mature and fulfilled adults, ready to take their places in their communities, their societies, their times.

And in order to bring to our children the best possible preschool experiences, we need to train teachers not only to the various Montessori techniques but in the underlying philosophy of Montessori so that a total harmony will pervade all activities, and the classroom work will be pointed toward the achievement of youngsters who are fulfilled according to their own developmental needs, not according to pre-set goals or paper tests.

The basis of Montessori's work was developing the child's self-concept so that it is positive and life-enhancing. This is especially important with the child of the sub-culture who all too often learns contempt before he can walk or talk. With a positive self-concept the child is freed for learning. The Biblical injunction to "love your neighbor as yourself" is precisely accurate, for only the person who loves himself, who values himself, can learn to love and value another person.

THE PROBLEM

The 257 square miles of land area within the unincorporated area of the Town of Brookhaven, excluding Fire Island, make it the largest Township in the New York Metropolitan Region. The Township of Brookhaven is almost equal in land area to the entire County of Nassau.

Brookhaven Town is a part of the New York Metropolitan Region, which is defined by the Regional Plan Association as the City of New York and the seventeen surrounding Counties in the States of New York, New Jersey and Connecticut. For statistical purposes, the Regional Plan Association breaks the Region down in the "Core," and three concentric rings: "Inner Ring," "Intermediate Ring," and "Outer Ring."

Brookhaven Town is a part of the Intermediate Ring along with Monmouth, Middlesex, Somerset, Morris and a part of Passaic County in New Jersey; Rockland, Putnam, upper Westchester, and Western Suffolk County in New York; and Fairfield County in Connecticut.

According to the Regional Plan Association, as stated in its Bulletin 100, Spread City, the Intermediate Ring, including Brookhaven Town, will bear the brunt of the region's population expansion over the next 25 years. In 1961, the Regional Plan Association stated that all land as far east as Riverhead, Long Island, will be fully developed in 1985.

In 1962, based on studies made by the Town's independent planning consultants, only 32%, or 83.5 square miles of the Township land area was developed. Of the 53,443 developed acres, the most extensive use is agriculture, accounting for 24% of the area, while residential uses account for 21% of the area; public uses, 20%; streets, 18% and industrial uses 10% of the developed land area.

When current estimates state that the Town of Brookhaven will be fully developed by 1985 (presently only 32% developed), it is, indeed, important to act on the promise of full development and provide the community with every opportunity to be ready as it moves toward being incorporated into the "Inner Ring."

The foregoing is not to say that there is not now a real problem in the Town of Brookhaven which must be faced immediately. The most cursory glance at the town will show the deteriorating, dilapidated, and obviously "low cost" housing which indicates a population of lower socio-economic resources than what is generally construed as "middle class." And the Town of Brookhaven has its true slums and its deprived inhabitants, old and young, living in self-perpetuating ignorance and squalor, even if the problem is tucked away out of the sight and consideration of most citizens.

There has been a growing concern among educators and the general public alike over the academic retardation shown in children from culturally and economically disadvantaged homes.

Research has shown that these children have been particularly deficient in skills which are involved in the learning process. Notably lacking are language abilities, both in communication with others and comprehension of verbal material. Marked deficiencies have been noted in the ability to concentrate or focus attention and in auditory and visual discrimination.

Research indicates that this academic retardation is a continuing process starting at a few months below grade level in the kindergarten and reaching two years below grade level at the sixth grade.

Handicapped by these deficiencies in his early years these children have little opportunity for success in school. The child faces a succession of failures which increasingly limit his motivation until, apparently listless and dull, he serves his time until the law allows him to drop out of school.

The future success, not only in school, but also in his later life, of the young child of lower socio-economic background who currently lives in the Town of Brookhaven may be directly related to his receiving a preschool experience. Although the relationship between social background and school performance is not a simple one, it has been found, by Janet Tribble, Union Free School District No. 32, of the Town of Brookhaven, that

> "Many children of average or higher intelligence, because of lack of motivation at home, do not enlist in the academic program of the school. Those that do, often fail regents examinations and are eventually forced into a 'general' program. Of 469 students in the ninth through twelfth grades in June of 1963, 218 (46.5%) took regents examinations. Only 83 (38%) passed all regents examinations they took at that time. Of 63 eleventh graders taking regents at that time, 18 (28.6%) passed. Only 7 (11.1%) of this total group of 63 eleventh grade students passed all regents they had taken up to that point."

If Miss Tribble's observation is not general for the Town of Brookhaven, her study was made within the town and certainly reflects an existing condition in the area.

Figures of school dropouts and unemployment rates further point to a critical economic, social and cultural problem.

In interviews with Family Court Judge Thom and with Roy A. Kahn, Assistant Director of Probation in Suffolk County, it was determined that many children in the lower socio-economic community are in difficulty with law enforcement agencies by the time they reach junior high school. Often, a family "pattern" is formed, with each sibling, as he "comes of age," getting into the same kind of difficulty.

Only a little over half of our nation's youth stay in school long enough to graduate from High School.

Cause for alarm? Yes, when we consider the fact that a high percentage of our juvenile delinquents do come from the ranks of the dropouts. It is further cause for alarm when we realize that dropouts drift unhappily from job to job, competing with adults for low-paying jobs, and that they assume little responsibility for improving their community or nation. This is a far cry from the goals of American education:

> To prepare boys and girls for effective participation in the civic and economic life of the country . . .
> To provide the best possible chance in life for each youngster

"Most of the youngsters who drop out of school at 16 or 17 are poorly prepared for the world of work. Usually in addition to lacking the training and education required for many jobs, they lack sufficient knowledge of their own abilities or of jobs in general to be able to make wise choices . . . 'Even in the present period of relatively full employment, youngsters who leave school before completing High School are likely to experience difficulty in finding satisfactory jobs. They are cut adrift from their familiar world of school, needing an income but experiencing the insecurity of the marginal worker who is often unemployed and usually unsure of his job. Under these circumstances it would be remarkable if some of them did not become lazy, restless, baffled or discouraged.' . . ." *

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* Allen, Charles M. Combating the Dropout Problem, Chicago, Science Research Associates, Inc. (1956)

The cost of deprived citizens and of slum housing to the community can be computed in many ways. It is measurable in the dollars spent on Public Welfare for the people, and the cost of special health, fire and police services required in the vain attempt to impose order upon the disorder of human misery.

The shockingly immeasurable cost of slum housing and deprivation lies in the perpetuation of the vicious circle of poverty -- slum housing based on low incomes caused by lack of education based on cultural deprivation caused by low incomes and slum housing.

A neighborhood, any neighborhood, is an effective teaching system, but a neighborhood already or fast becoming a slum, tends to defeat the efforts of public education long before the child enters the kindergarten or first grade.

The Brookhaven Town Project seeks to remedy this situation through development of a special program for pre-school education of these children which will prepare them to enter the existing public school system, and at the same time they will be gaining values by which to live. They will be learning that work is required to meet the basic needs of themselves and others; that work has different rewards and at the same time is both demanding and satisfying. In the operation of this program, work and school are not separate worlds. School is work.

Attitudes toward work are learned or "caught," and most frequently have their genesis in childhood experiences. In the Brookhaven Project the program will be concerned with the child's perceptions of and attitudes toward work.

We cannot teach skills for a future we cannot foretell. We can only teach better attitudes toward work so that each child can learn to find significance in any task he undertakes.

The program at the Brookhaven Project will provide those children with no previous learning experiences with special programs to develop self-reliance in personal matters as well as the readiness for later school achievement. For the child who may have experienced prior difficulties and already developed poor feelings toward himself and learning, the program will exert a therapeutic effect.

The program is designed to foster in each child the desire to achieve at his maximum capability while developing the skills necessary to attain the goal.

By initiating the establishment of a Master Plan for Town growth and development, and creation of the Long Range Study Committee, the Town of Brookhaven made its first stride toward elimination of many of the roots of poverty and slum housing. The mobilization of the Suffolk County Department of Welfare, the Suffolk County Family Court and the Board of Cooperative Educational Services for the Second Supervisory District by the Town of Brookhaven for the purpose of establishing a pre-school education program and the development of community improvement programs related to it, marks the first break in the vicious circle of poverty in Suffolk County.

A Summary Statement of

THE BROOKHAVEN TOWNSHIP PRE-SCHOOL EDUCATION PROGRAM

The environment in the Brookhaven Project will be reality bound, and designed to develop a sense of security especially helpful to children from disorganized homes. Order will be stressed to reinforce the child's feeling of security in the schoolroom.

The child's attitudes toward work as the basis of all accomplishment will be developed, as the child is taught to respect the results of his own efforts rather than to depend on the praises of others.

The experiences of each child in the Project will form the basis of his self-fulfillment in the future regardless of whether his adult skills lie in his hands or in his head.

Self-help will be recognized as one of the major needs of the children. Techniques and methods of learning self-care without emotional overtones have been developed and will be utilized so that the child can develop independence and control of his environment. Special exercises in the skills of daily life will be of particular value to those children who do not receive such training at home.

The training materials and methods used in the program will stress development of all the senses. Sensorial materials will be utilized to develop in each child the ability to see, compare, differentiate and explore effectively his environment.

Self-correcting exercises will give each child greater freedom in the expression of individual differences. It will be possible for each child to identify his own mistakes and become secure and confident in dealing with his own problems. Self-correcting exercises will serve as ego-strengthening experiences for the children.

Each child will retain psychological as well as physical freedom to move and work according to his own individual needs. Each child will work on an independent basis, so that those children with special needs can be taken care of without having the matter brought to the attention of the entire class.

A MOTHERS BANK

Much of the war on poverty must be a women's war. An all out effort by the women of Brookhaven Town must be made to win this war. The cultural and financial resources of the Town of Brookhaven, the County of Suffolk or the Federal Government are alone not enough to succeed, human resources must be utilized to their fullest extent in the Community effort. A "Mothers Bank" serving the pre-school centers established under the Brookhaven Project is a first step toward tapping the vast potential of Brookhaven Town's human resources.

The Mothers Bank volunteer is a woman free of the responsibility of pre-school age children of her own, except if they may be participating in the Brookhaven Project, who finds herself with the time and desire to assist in a very special, yet limited, way in the growth of the children of the pre-school program.

During the initial stages of the program, the women chosen from the categories of unwed mothers, sole parents, high school dropouts and unemployable High School graduates should be from among the mothers of the children already selected for the program.

> A qualified psychologist should administer appropriate tests to screen out those women who are retardates, organics or suffering from severe emotional disturbance.
>
> A physician should administer a thorough physical examination with specific attention to communicable diseases.

Goals of the "Mothers Bank" Program

> To provide a training facility, for young women of limited background, in the care and education of young children.
>
> To direct the education of young mothers without a complete High School education toward development of proper attitudes toward work and education, and equip them with basic homemaking and child-care skills, in order that they may support the formal pre-school program by their efforts at home with their own children.
>
> To involve parents of the children involved in the Project in the care and education of their own children and provide these parents with sufficient experiences to develop responsible community attitudes.
>
> To encourage proper work attitudes among the families of the children involved in the Brookhaven Town Early Learning Program.
>
> To develop marketable skills in these women and provide a source of skilled non-professional day care aides for the community, adding to the Town's industrial potential and capabilities.

Since most of these young women will be ill-prepared to accept or understand extensive verbal instruction, the program must be based on education by demonstration, essentially non-verbal in approach. Each woman must experience the program activities for herself.

The women will be trained to assist in the presentation of the exercises of practical daily life; elementary child care; and to serve as examplars of personal courtesy and the social graces.

Following is a general outline of the program for these women and comments on the general community implications of it.

Personal Grooming and Hygiene

Adult volunteers from the community as well as social workers will serve in training and advisory capacities. The women of the program will be taught to organize their outer selves and improve their own personal lives as part of their preparation for assisting the children in the project to do the same.

It is only through the development of an attractive self-image that these women can concentrate on the more abstract areas of career training and care of their homes.

To reinforce the self-image of these women and develop group feeling, it is suggested that a simple uniform for the women in training be adopted. It could be styled much as a laboratory coat, but in color and with a distinctive emblem and designation, such as C.D.S. (Child Development Specialist).

The adult volunteers will provide special skills in training the women, but more important, they will provide the stimulus and example of daily application of the principles being taught the C.D.S. trainees and enable these women to develop one-to-one relationships outside their peer group during the work day.

Food Preparation

Proper nutrition is a basic need of all children, and the particular need of many of the children served in the Brookhaven Project. The women being trained as Child Development Specialists will be taught to prepare wholesome breakfasts, snacks and meals for the children and themselves.

As a part of this program they will learn food values, budget planning, meal preparations and the beginnings of household science, while learning to serve and watch over the interests of others. Through the skills developed in this portion of the program, the women will be preparing for work in their own homes, the private homes of others, and restaurants and other commercial establishments.

General Observation of Child Development

The trainees should observe infants and young children under supervision in such programs as the pre-natal and post-natal training clinics at the local hospitals, local nursery schools and the public and parochial school kindergartens. Such observation should be conducted under the supervision of a volunteer adult from the Project.

Materials of Children's Art

The Child Development Specialists must be given the opportunity to work with clay, paint, chalk, crayons, papier mache, sand, plaster, and other art media. Again, the opportunity will be presented to remedy any deficiencies in the experiential background of these trainees, without embarrassment to them. This first hand knowledge of materials can then be consolidated with other work in teaching techniques. Their child's need to explore and learn his world through creative artistic experiences is crucial to healthy development and increased awareness, and since future Child Development Specialists can be expected to direct and help others direct art lessons, they themselves must be familiar with the materials.

A Survey of Science for Children

The pre-school program of the Brookhaven Project plans to provide for the children basic experiments with magnets, seeds, animal behavior, weather observations, the pattern of seasons, etc., and the use of simple scientific instruments such as the magnifying glass and telescope, thermometer and the like.

The C.D.S. Trainees will learn the simple experiments and develop methods of making scientific observations for the purpose of awakening curiosity and interest among the children in their care.

Tutorial Program

In order to consolidate the various learning experiences of the C.D.S. Trainees, a tutorial program will be administered by the professional staff of the Project. The program will be conducted in a non-evaluative atmosphere and designed to provide experience in verbal activity to the trainees, many of whom will be relatively inarticulate at the commencement of the program.

The "Mothers Bank" Program will serve the Community in a variety of other ways.

It will develop materials, including manuals, training techniques, and films, for the training of non-professional members of the community in the care and education of pre-school children, enabling them to implement the curriculum developed in the Project and serve existing nursery schools, day care centers and church schools, as well as the Public Schools where appropriate.

It will develop special programs centered about the education and care of pre-school age children, for the following groups of women: unwed mothers, women who are the only parent in a family, high school dropouts, and high school graduates lacking employment skills -- encouraging them to utilize existing community opportunities for their own personal development and that of their children.

The Program will develop methods of mobilizing Community resources at all levels for the implementation of the Project objectives; and it will extend Community involvement in the total education of its children.

THE HISTORY OF
THE SENSORIAL METHOD

During the late 19th century two famous French doctors -- Itard and Seguin -- were devoting their lives to the education and research of mentally deficient children. Dr. Jean Itard, born in 1775, made a great contribution to educational theories with the methods he devised in his efforts to civilize the "wild boy of Aveyron," -- a boy who was found living wild in the depths of a large forest of France. The story of this savage boy makes epic reading and illustrates interesting educational practices used by Dr. Itard to educate him.

He was eleven years old when found in the forest, where he had apparently lived most of his life with no contact with human beings. Dr. Itard worked many years on this case and arrived at many conclusions, one of which was that a relaxed environment with suitable stimuli can become a potent factor in education.

Dr. Seguin (1812-1880), a student of Dr. Itard's, became interested in the life and education of deficient children. His method, which he called the physiological method, tried in essence to teach abstract ideas through concrete materials, and is, as he emphasized, applicable to the education of normal children as well.

When Dr. Maria Montessori began her career as a Doctor of Medicine about the year 1900, it was unusual for a woman to practice medicine. As a matter of fact, she was the first woman to receive a medical degree in Italy. One of her first assignments was to visit insane asylums and find interesting cases to send to the University clinic for study. On one of her trips, she discovered a group of retarded children, who at that time were classified with the insane. They were herded together in a bare room, without any toys and without any materials to manipulate. Observing the children after they finished their meal, she saw that they practically fought over crumbs that had dropped on the floor and tried to mold them into shapes of objects. She concluded that this action stemmed from a craving by the children to use their hands, and she realized that work in manual activities would be essential in the treatment of mentally retarded children.

She immediately studied the works of Itard and Seguin, and from this material and from the knowledge acquired through her own observations, she taught these children to read and write. After two years, some of the children were able to pass the examination to enter the public schools in Rome. Dr. Montessori's success was so great that the Minister of Education asked her to apply some of her methods to normal children.

In 1907, Dr. Montessori directed nursery schools in the San Lorenzo Quarter in Rome. This was a slum area in which the children came from neglected homes and were given little opportunity for play activities. She had tremendous results with sensorial materials with these children. She taught them practical life activities, which, in turn, helped to change conditions in their homes. Thus, through observation she developed her methods. Before the children reached school age, they were able to read and write. Her methodology spread throughout the entire continent, and into America during the time of Dewey.

Of whatever variant in methodology in applying the basic sensorial concept of learning, it is generally conceded that all such schools and programs derive their premise from the discoveries of the Doctors Itard, Seguin and Montessori.

Dr. Montessori was not only a doer. She was also a theoretician and writer who left a body of principles and directives. From the pages of her writings, we can make a list of her findings on the characteristics of the pre-school child. He prefers work to play, order to disorder, silence to noise, self-mastery to dependence on others, mutual aid to competition. He is a joyous, sometimes ecstatic, sometimes serious, little creature. He is capable of profound spontaneous concentration, of sublimating possessiveness, of acting from real choice rather than idle curiosity, and of obedience. And he has a strong attachment to reality.

> "The basic idea in the Montessori philosophy of education is that every child carries unseen within him the man he will become. In order to develop his physical, intellectual and spiritual powers to the fullest, he must have freedom -- a freedom to be achieved through order and self-discipline. The world of the child is full of sights and sounds which at first appear chaotic. From this chaos, the child must gradually create order, and learn to distinguish among the impressions that assail his senses, slowly but surely gaining mastery of himself and his environment.
>
> "Dr. Montessori developed what she called the 'prepared environment' which already possesses a certain order and disposes the child to develop at his own speed, according to his own capacities, and in a noncompetitive atmosphere in his first school years, understanding the necessity for the acquisition of a basic skill before its use in a competitive learning situation. The years between three and six are the years that a child most easily learns the ground rules of human behavior. These years can be constructively devoted to 'civilizing' the child -- freeing him through the acquisition of good manners and habits, to take his place in his culture.
>
> "The method by which children are taught in the Montessori school might well be 'structured learning.' Since the child has learned to work by himself, in the prepared environment, enjoying the presence of other children, but not working necessarily directly with them, the teacher is able to teach a child individually. . . The only valid impulse to learning is the self-motivation of the child. Children move themselves toward learning. The teacher prepares the environment, directs the activity, functions as the authority, offers the child stimulations, but it is the child who learns, who is motivated through the work itself . . . to persist in his given task. If the Montessori child is free to learn, it is because he has acquired from his exposure to both physical and mental order, an 'inner discipline.'

> "Patterns of concentration, stick-to-itiveness, and thoroughness, established in early childhood produce a confident, competent learner in later years. Schools have existed historically to teach children to observe, to think, to judge. Montessori introduces children to the joy of learning at an early age and provides a framework in which intellectual and social discipline go hand in hand." *

In "Give Slum Children a Chance," published by Harper's Magazine in May, 1964, Charles E. Silberman writes:

> "An impressive body of research in the psychology of cognition and perception as well as in the neurophysiology of the brain has made it clear that exercise of the mind early in life is essential for its later development. The human being is born with less than one third of the adult brain capacity, and there is tremendous growth of the cortex after birth. The way in which the cortex and, indeed, the whole nervous system develop is directly affected by the environment. Hence, mental alertness and in particular the ability to handle abstractions depend physiologically on a broad diversity of experience in the environment of early childhood.
>
> "'We know now,' says Professor Jerome Bruner, director of Harvard's Center for Cognitive Studies, 'that the early challenges of problems to be mastered, of stresses to be overcome, are the preconditions of attaining some measure of our full potentiality as human beings. The child is father to the man in a manner that may be irreversibly one-directional, for to make up for a bland impoverishment of experience early in life may be too great an obstacle for most organisms.' As Brunner puts it, 'supply creates its own demand'; in the phrase of the great Swiss child psychologist Jean Piaget, ' the more a child has seen and heard, the more he wants to see and hear.'" **

Many schools of psychology maintain that the individual is born with a certain degree of intelligence which remains the same throughout life. The functioning of the intelligence, however, depends to a great extent upon mental constructions that are built by experience and developed by conscious and unconscious association. It is this development that can be aided by education.

When we speak of sensorial education, many people object that children do not have to attend a school for this. While it is quite true that the sensorial impressions received in a school are poor compared with those obtained from the outside world, sensorial impressions are not the same thing as sensorial education. It is possible for an individual to receive any amount of sense impressions and be "none the wiser." Sense impressions alone are not enough; the mind needs education in order to discern, record, recognize and evaluate what is sensed. Otherwise, it is a case of "eyes that see not, and ears that hear not."

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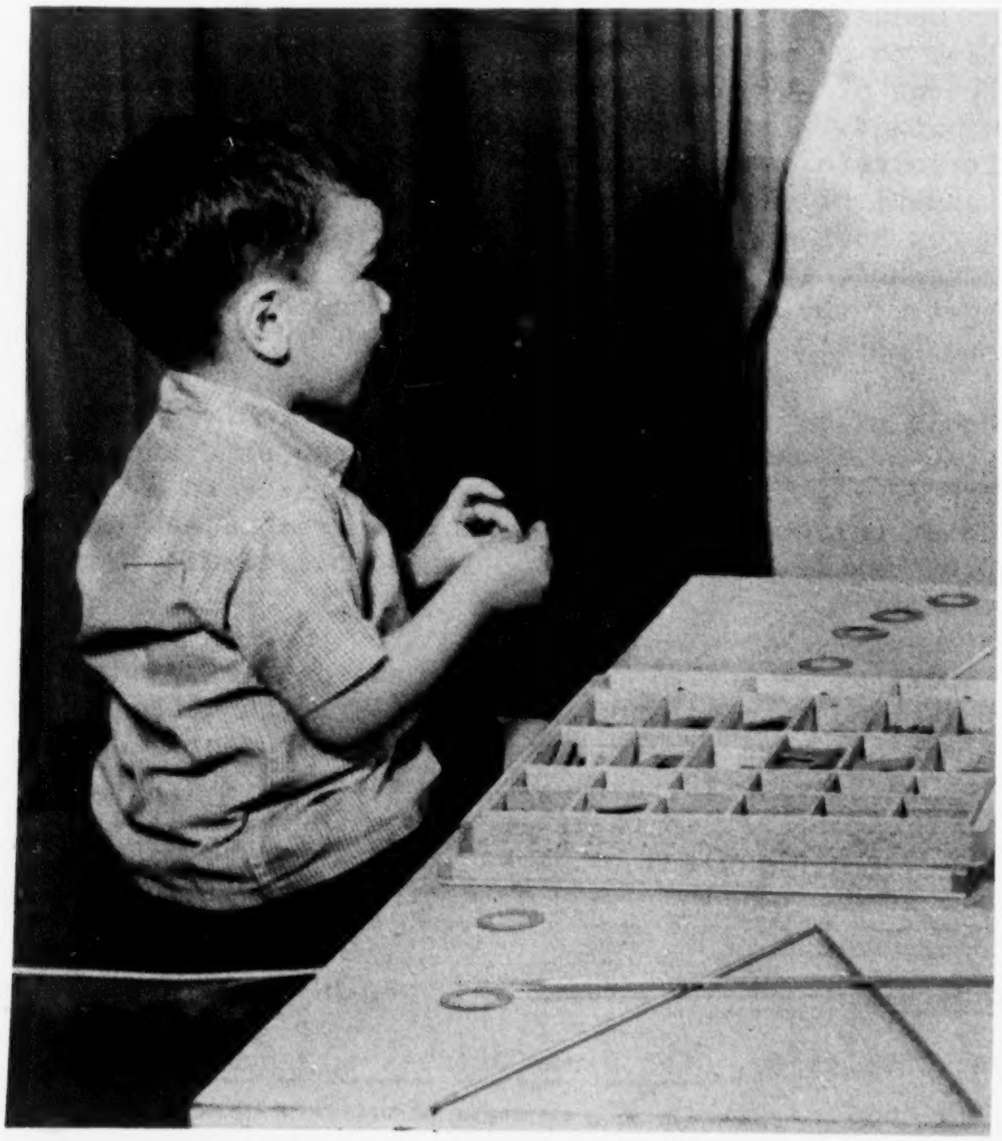
* The Montessori Method. New York, American Montessori Society.

** Silberman, Charles E., Give Slum Children a Chance. Harper's Magazine, May 1964.

A common misconception concerning sensorial education is that the aim is to sharpen the senses physically by means of repeated exercises. When we "educate" the senses we are not trying to make the child see better, we are trying to help him recognize what it is that he sees. By providing strongly contrasted sensations, whether of texture, shape, sound, sight, taste or smell, followed by variously graded intensities of sensations, we are teaching the child to differentiate.

This is the beginning of a conscious awareness of the environment, an addition to the unconscious awareness that he already has. As the child learns to isolate and recognize the sense impressions and the qualities perceived, he is gradually building up abstract conceptions: rough, smooth, hard, soft, round, square, loud, quiet, light, dark, sweet, bitter, etc. At the same time he is learning to compare, differentiate and contrast; to distinguish different sense impressions and to put them in some kind of order.

This is the beginning of the development of the intellect.



GOALS OF THE PROPOSED CURRICULUM

To help each child develop a positive self image, and encourage in each child the foundation for independent thought and action.

To develop in each child an awareness and understanding of his environment.

To improve communication skills, perceptual awareness, and motor coordination, increasing the level of each child's readiness for school achievement and participation in community activities.

To develop in each child the ability to think quantitatively; understand the structure of the number system and the logic of the arithmetic operations.

To foster aesthetic values through experiences in art and music.

To promote good health in the children and encourage physical development.

The basis of Montessori's work was developing the child's self-concept so that it is positive and life-enhancing. This is especially important with the child of the sub-culture who all too often learns contempt before he can walk or talk. With a positive self-concept the child is freed for learning. The Biblical injunction to "love your neighbor as yourself" is precisely accurate, for only the person who loves himself, who values himself, can learn to love and value another person.

THE PREPARED ENVIRONMENT

Around the Room

How does the young child see himself in our adult world? The first approach and perhaps the most important is to understand his view of the adult world, to put ourselves in his place, to look at the world in his perspective.

It is a world of giants! The very small child can barely see above the window ledge, his nose reaches the back of the chair, his crib is elevated for adult convenience. We do not stoop to him but raise him to our level. For the three- and four-year old, the stairsteps loom menancingly high. He is a tiny creature in this big big Paul Bunyan world. The young child in the Brookhaven Project is a child who lives in a home where family funds and family "know-how" is not available in any way to prepare chairs, beds, tables, or any phase of his environment to his needs. He is left to adjust as best he can. It is not a challenge, it is a mounting frustration with resultant feelings of overwhelming insecurity. Dwarfed by their environment and too often crushed by their feelings of inadequacy, of not belonging in this giant world, can carry over to emotionally insecure behavior so unacceptable to society.

Dr. Maria Montessori, one of the first to speak to this point, suggested an environment prepared for the young child. At that time, at the turn of the century, this was considered revolutionary. John Dewey, too, expressed concern and deplored the lack of suitable furniture to fit the needs of children in the schoolroom. In the Brookhaven project, everything the child will work with must be suited to his size and needs.

In furnishing a classroom, the story of the Three Bears is a key to keep in mind. It is of great importance to have furniture scaled to the heights of the children. (In a three-year-span age group there are varying heights, and this should be kept in mind when buying tables and chairs.) If the child is to be truly comfortable in this environment, certainly he should be spared the distraction of trying to explore and discover a child's experiences in an adult's physical framework. Every furnishing of the room -- tables, chairs, shelves, beds, hooks, cupboards, chests, tubs, sinks and toilet facilities -- should be "Just my size!"

The tables and chairs must be easily lifted and moved by the child. Light colors will help the child to see dirt and he will be more conscious of wanting to keep the tables and chairs in clean condition.

Of course, it is not always possible to start and buy furniture from scratch. Contact paper now available in beautiful colors can be of great help in making the environment more attractive. Boards which can easily be painted or covered with contact paper can be used with glass bricks to make bookcases. If cupboards do not have doors, it is advisable to have some kind of curtains so that some of the material which is not in use at the moment can be kept out of sight of the child.

If pictures are used, there shouldn't be too many -- possibly only one good painting or reproduction with a theme suitable for the understanding of young children. Pictures should be hung at eye level, and one must remember that a small child is very much reality bound -- so abstract pictures are not desirable for a small child. "The Little Girl with a Watering Can" by Renoir; "The Old Shoes" by Van Gogh; "At the Kitchen Door" by Holbein -- are examples of subjects suitable for smaller children.

If it is possible, small vases with flowers add much to the attractiveness of the environment. Of course, one should avoid putting flowers into discarded jam jars.

Young children seem to work most comfortably on the floor and ample space must be provided to allow for traffic to flow around them. Small mats or rugs, approximately two by three feet in size, that the children can roll and unroll easily by themselves, should be provided for the children to sit on and work, not only protecting the child from a cold floor but defining the work area, protecting the materials the child is using and providing the child with a structured extension of himself. The floor mats and the small individual table mats place a topographical boundary around the child's work, a boundary respected by the other children.

Low shelves should be built around the room enabling the child to reach comfortably for any apparatus he might need and just as easily return the item to its proper place. Color coding is provided to help the young child with the orderly return of materials -- one of the basic ground rules of the prepared environment. The scrub bucket might have a red trim to match the red mark on the spot where it is to be stored and returned after use.

In the ideal classroom, there would be a coat closet in the anteroom, but if this is not practical, then a section of the room must be reserved for the storage of the child's personal property -- a hook for his jacket, a place for his overshoes, and a cubicle or drawer for his own "work" and "possessions."

Another section of the room must be devoted to the exercises of practical life, providing a place for the care of the child and the environment. Each child will have his own personal comb, hand towel and soap. There will be shoe polishing equipment, as well as the mops, brooms, dust cloths and scrub brushes and buckets, all easily manipulated by the children in order that they may care for the general maintenance of their own classroom and themselves.

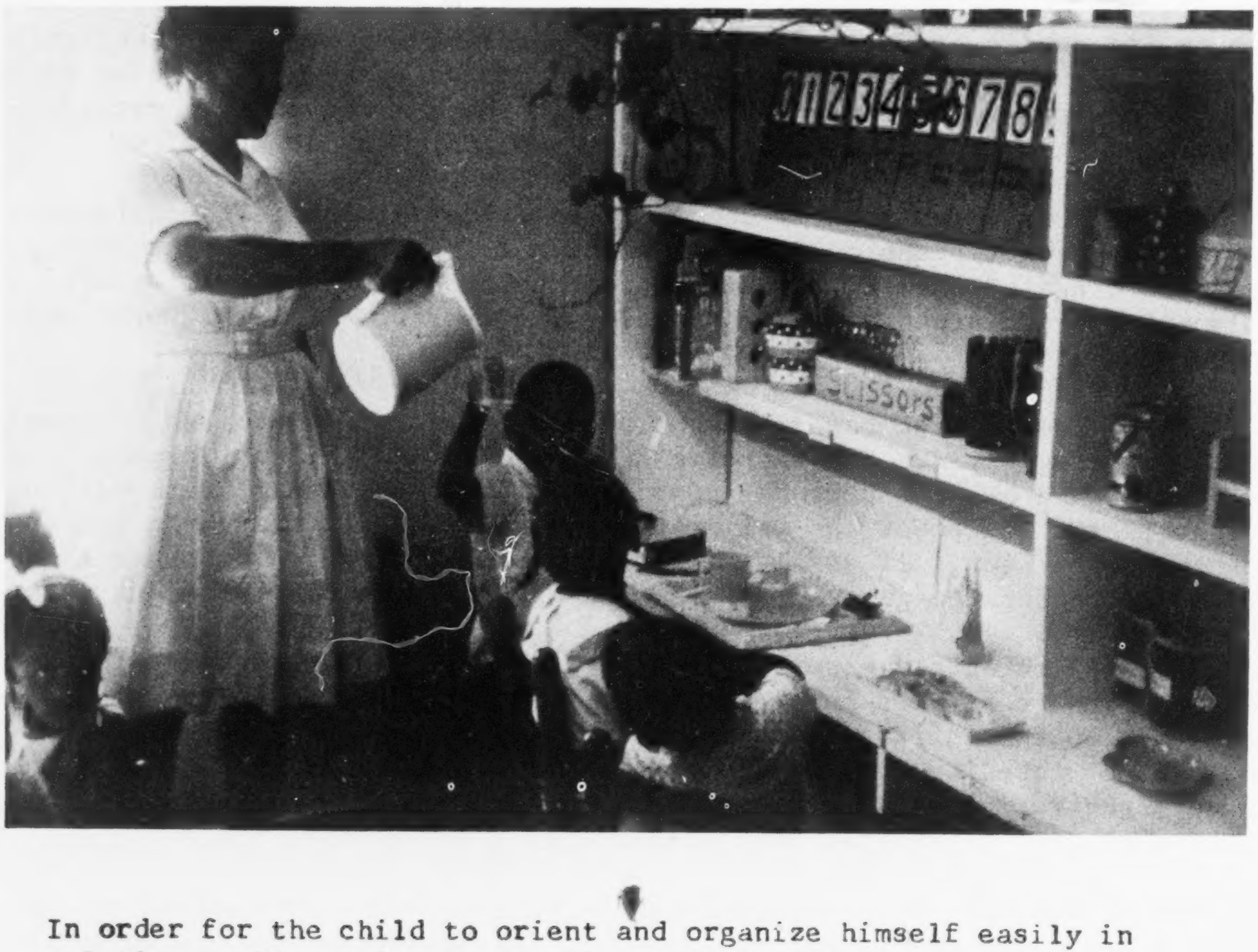
Cleaning materials consisting of brooms, dust pans, brushes, Bissell sweepers, should be of a manageable size, but not toy size. They should be attractive so the children like to use them, but this does not mean they should be of inferior grade. The children should be able to work with them without frustrations. If a dust pan is too small a child is not able to pick up the waste and he will be very discouraged after a short while.

The teacher can help the children in picking out a particular set of tools of one color which will be used only for scrubbing tables, while another color bucket and sponge is used for cleaning the floor; still another for washing paint brushes. Rags should certainly be not just any old cut up materials, but nicely hemmed pieces of cotton and laundered frequently, which older children will enjoy doing. In the case of smaller children, it will be the responsibility of the teacher to do so.

Still another section of the room will be devoted to the Motor Skills equipment, and another to the special Sensorial Apparatus, and there should be a library and music corner. Using colored tapes to mark off the different areas will help the small child to find the place to return the used materials.

It is of the greatest importance that all materials and equipment be arranged in an orderly fashion with a definite place for everything. This order makes it easy for the child to orient and organize himself in relation to his environment. The order and consistency provide an atmosphere of security. Knowing that all the materials and equipment have a definite place (unless someone is working with them), children are free to find and work with whatever interests them.

The Prepared Environment



In order for the child to orient and organize himself easily in relation to his environment, all materials and equipment were arranged in an orderly fashion with a definite place for everything. Notice that the furniture is scaled to the heights of the children.

THE FUNDAMENTAL EXERCISE

MATERIALS:

All the objects needed to carry out any particular exercise.

PRESENTATION:

Show the child where the material is kept on the shelf, and how to carry it to his place of work.

Interest the child in the main point of the exercise, either in the point which will keep him from disaster (breaking the material or cutting himself) or the salient feature to be taught (the contrasts, the function of one of the mathematical operations, etc.). Show the child the exercise, pausing at the important points so that he can see and understand the emphasis. Be sure the child is watching. If he loses interest, wait for a better moment.

Invite the child to do the exercise, remaining nearby to observe his first attempt.

When he has repeated the exercise as often as he wishes, all materials are to be returned to their place on the shelf in the order in which they were found.

The first presentation is not the time to discuss all the interesting variations inherent in the material. Its purpose is to show the child what to do with the apparatus so that he can work by himself. Conversation is appropriate to bring his attention initially and later to reinforce his interest, but it should not distract him from the demonstration.

Let the child discover as much as he can for himself, as long as he is generating interest. If he is not sufficiently interested, show him points to renew his interest and to carry him to new levels of accomplishment. Most normal children, if working on something suited to their age and interest, do not need to have their attention recalled and will repeat their exercise many times, correcting their own errors and disliking interference or help.

EXERCISE:

The table should be clear of materials.

Get up from the chair at the table and replace the chair quietly.

If a rug is needed, go to get one. Carry it so as not to bump anything. Place it out of the way of traffic.

Go to the shelf and get the desired apparatus. Carry it properly to the place of work. Do the exercise, repeating it as often as desired.

Put the material back on the shelf in the correct place with all the parts of the material in the order in which it was found.

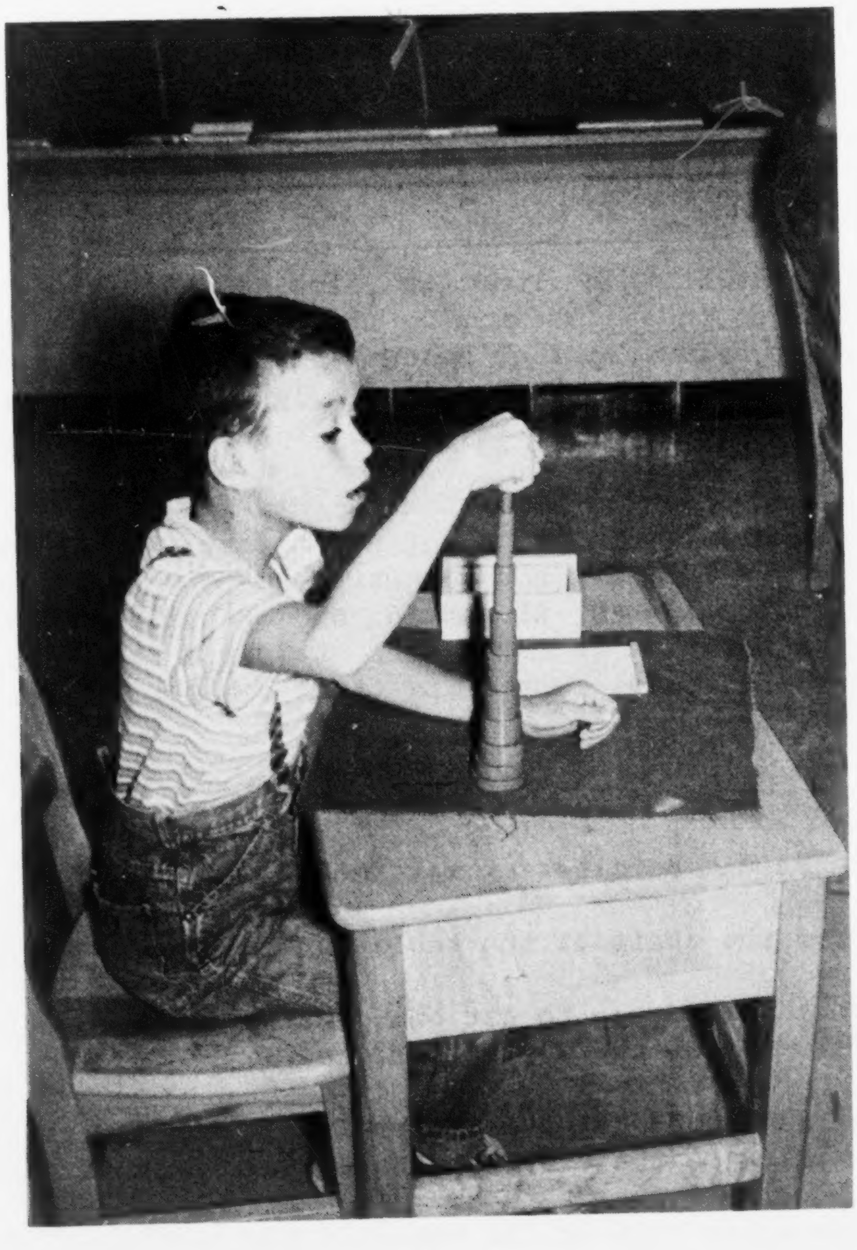
POINTS OF INTEREST:

The points of interest are an analysis of the elements of the activity which serve as a guide, whereby the child can learn by himself to avoid error, to succeed and to attain new levels of ease, speed, accuracy and grace.

They are also a guide for the teacher. By means of them, she may isolate the elements of the exercise so that she can give a clear presentation.

She may use them as ways to interest the child in repeating the exercise often enough to master it.

She can use them as a help in observing the child's knowledge, skill and self-control.



THE THREE PERIOD LESSON

The three period lesson was devised by Dr. Montessori from Seguin's work with defective children. It is used whenever the child is to learn the exact name of an object or quality or experience.

The First Period: The Association of Sense-perception with the Name.

The teacher must first of all pronounce the necessary name or adjective, pronouncing the words very distinctly and in a loud voice, so that the various sounds of which the word is composed may be distinctly heard by the child.

For example, in the first exercises on the senses, the smooth card and the rough card having been touched, she will say, "It is smooth," "it is rough," repeating the word a great many times, with various modulations of the voice, but always with clear vowel tones and with distinct enunciation: "Smooth, smooth, smooth," and "Rough, rough, rough."

In this way the lesson establishes the sound of the name with the object or with the sensorial experience which the name verbalizes. The object or experience and the name must appeal to the child's understanding at one and the same time. It is imperative that no word other than the name or experience being learned be pronounced.

The Second Period: Recognition of the Object Corresponding to the Name

The teacher should always test the success of the lesson which she has given.

The first test will be that of finding out whether or not the name has remained associated with the object in the memory of the child. The teacher will have to allow a time to elapse between the lesson and the test. Several moments of silence should intervene between the lesson and the test. Then the teacher will ask the child, pronouncing slowly and with very clear pronunciation, "Which one is smooth?" "Which one is rough?" She must begin with the last one spoken in the first period lesson.

In repeating the question a great many times the teacher repeats that word which finally will be remembered; and at every repetition the child has repeated the exercise of associating the sound of the word which he is learning with the fact or nature of it.

If the teacher notices at the start that the child is not disposed to pay attention and makes mistakes in answering without making any effort to do well, she should suspend the lesson and start it again at another moment, on another day.

If the child did not succeed in associating the name with the object, the only way in which he can succeed will be to repeat the act of sense stimulus as well as the name; that is, repeat the lesson.

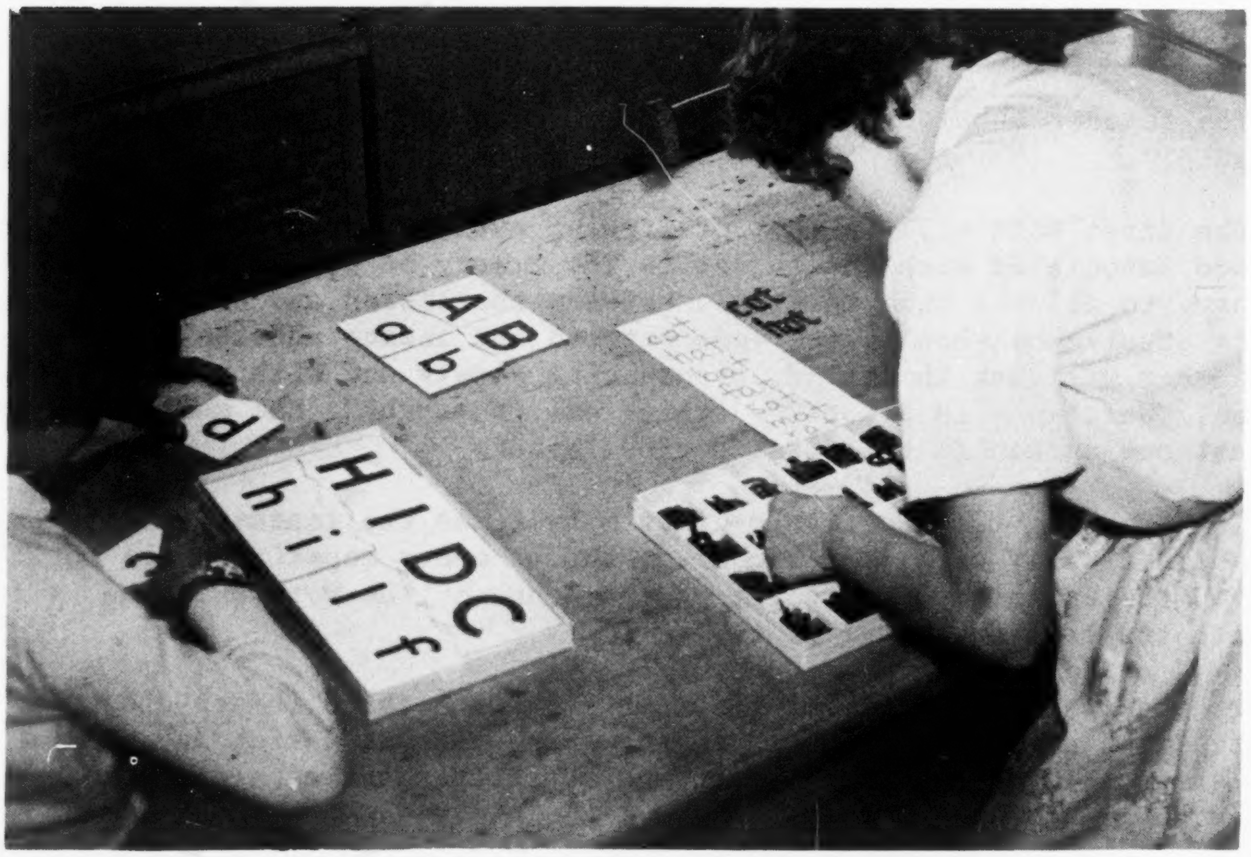
The Third Period: Remembering the Name Corresponding to the Object.

The third stage is a rapid verification of the lesson taken first. The teacher asks the child, "What is this?" and, if the child is ready to do so, he will reply with the correct word, "It is smooth." "It is rough."

Since the child is often uncertain in his pronunciation of these words, often new to him, the teacher may insist on having them repeated, once or twice, encouraging the child to pronounce them more clearly, saying, "What is this?" "What is this?" If the child shows marked defects in speech, this is the time to make them perfectly clear so that definite corrective exercises in pronunciation may be given afterwards.

If the child is unable to give the correct response, the teaching has either been faulty or the child is simply not ready. In this case the lesson may be repeated if the child is interested, but it should be postponed if the child shows weariness.

If the lesson is to be repeated, then the teacher should begin with the first period lesson.



Taken from The Discovery of the Child, pages 203-206

Development of a Positive Self-Image

One of the basic aims of the Brookhaven Project here proposed is to help each child develop a positive self image and encourage in each child the foundation for independent thought and action.

There are several devices to assist the child to see himself as an individual:

A. Pictorial displays showing a variety of ethnic groups of children, family groups, and community groups in a variety of activities, at work, at play, at home, at school, at worship, and so on.

B. Full length mirrors in halls and lavatories, easily accessible to the child as he enters the school in outdoor clothing, after he has taken off his coat, scarf, boots and other outerwear; and as he goes about the various activities of his school day, seeing similarities and differences among members of his peer group, faculty and visitors.

C. Full-view photographs of each individual child, taken in school preferably with some form of polaroid camera. The photographs may be used for basic identification of self; taped on the doors of the "cubbies" where each child keeps his outdoor clothing or personal articles. Photographs of each individual child engaged in school activities with other members of the group could be posted at eye level about the classroom.

D. Individual wrapping paper images to which the child can later "map" himself in a one-to-one relationship could be placed at child level along a corridor of the school. (To make the images use a roll of kraft wrapping paper; prepare a piece about a foot longer than the child, have him lie down on the paper; trace his body outline using a Magic Marker and, depending on the child's ability with scissors, either cut out the outline or have the child do this for himself. The child may color in the details of himself as he sees himself. These "self-portraits" can be mounted.

The Child's Own

It has been said, "delinquents are made, not born." No child is born either honest or dishonest. These are attitudes the child learns. The young child will formulate his own ideas of honesty from his environment, and the experiences he is exposed to at home, in school and in the community.

Respect for the property of others can best be learned by example. Since these children may not receive this example in the home, the prepared environment of the school develops the sense of property in each child. To understand "ownership," the child must himself own something. Only when the child understands that some object is his very own, can he then learn the meaning of "mine" as contrasted to the meaning of "yours," "his," "hers," or "theirs."

The young child in the Brookhaven Project, who rarely has either privacy or property in his home, must first be exposed to the concept of "ownership" in the prepared environment. There is a place, his place, with his name on it; a place to hang his coat; a place to store his things; a chair, his chair, on which to sit; a desk, his desk, on which to work; a drawer or cubicle in which to keep his own work. All this his very own. He will respect his ownership, and develop respect for the ownership of others. He will acquire the same attitudes toward the property of adults as he has had adults show toward his own property in the prepared environment.

Studies made on understanding the motivation for the taking of property from another without right emphasize that such action is "other-directed behavior."

> ". . . he may compensate for his inferiority in school by winning the approval of his playmates by his boldness and ingenuity in breaking the laws of God and of man, including those of the teacher. . ."
>
> Rivlin, Harry N., Educating for Adjustment
> D. Appleton-Century Co., Inc., N. Y.

Dr. Maria Montessori in her studies of these deviations in the young child evolved a method of approach to the problem before the deviations became manifest:

The prepared environment meets his needs.
It is self correcting and leads to success experiences.
The rewards are intrinsic.
The child need not look for substitutes for status.
Power is his -- in his mastery of the work apparatus.
Affection is his in the form of the complete attention that the Teacher is able to give him because of the individual nature of the teaching method.
By meeting physical and emotional needs through the prepared environment, the need for other-directed behavior is minimized.

The Child's Limits

There is the belief that the child has to learn who he is; and he has to learn to get along with himself before he is capable of getting along with anyone else, or even before he is capable of being aware of the existence of anyone else.

Thus, in the environment prepared in advance by the adult, ground rules of human behavior are established. These limit the child's activities.

A child is taught not to touch another child's work while the other child is working. The Montessori apparatus is so arranged that it is accessible to the child at any time, but the child is taught the proper use and the proper time for the materials. One of the basic ideas in this procedure is that the child must learn to be responsible for returning the equipment with which he has been working. This means that the child has an individual responsibility and cannot depend on the help of other children without asking for it.

In the classroom, the children have a definite obligation to keep the environment in order. There are definite rules:

1. An object used by a child must be returned to its original place, in its original order, after a child is finished with it.
2. Any task, once begun, must be finished.
3. Nobody else can use the same object at the same time.

Moreover, in this "prepared environment" there is a limited amount of apparatus. The purpose of this is to enable the environment to teach the child some aspects of social living. The child is forced to await his turn to use the apparatus and, upon completion, must return it in good condition. The fact that someone else may be working with a piece of equipment often creates interest in another child and serves as an incentive. There seems to be a built-in lure in wanting and waiting. At the same time the child is building, within himself, that inner control which is not imposed on him directly by an adult.

The Child's Hope

Children from homes where social disorganization can be shown, from arrest records or other similar objective data, should be preferred for training in the Project. Assuming that the existing research showing the great influence of early childhood experience upon the development of individuals is correct, then the development of strong constructive attitudes toward family, work and society within the Project program should exert a lifetime effect that is good, for the child and for the community.

The Child's Name

The young child is very interested in his name -- it has an emotional significance for him -- and so we recommend it as the first word he should learn to read and write. He should be helped to recognize his name on his first day at school. He should be presented with a label for his clothes rack and shown where to stick it. Color coding or a picture of an animal, toy, fruit, etc. might be helpful to him, in the beginning, to recognize his name. Coats, sweaters, boots should be marked by parents, so the child's clothes will not be lost. After the child chooses a chair to sit on, a name label should be pasted on his chair. The same type of writing used for his name should be used for a drawer or box to keep his work.

Tracing name:

Jonathan

Name enclosed in plastic

Strips of tracing paper and an Esterbrook pen in color will help with tracing.

Playing games with children's names:

Boys	Girls
John	*Mary*
Paul	*Joanne*
Louis	*Cathy*

Write names in colors, red for girls, blue for boys; make matching cards for superimposing on the chart.

A group game can be played with the same chart. The teacher reads the name of the children. As each name is read, the child comes and finds, or is helped to find, his own card until everyone has one. Then she points to various names on her list, and the children whose names are indicated get up and show their cards.

Other games with names are:

Matching name with like name.

Joseph	*Joseph*
Jane	*Jane*
David	*David*

Sorting Boys and Girls names on different piles.

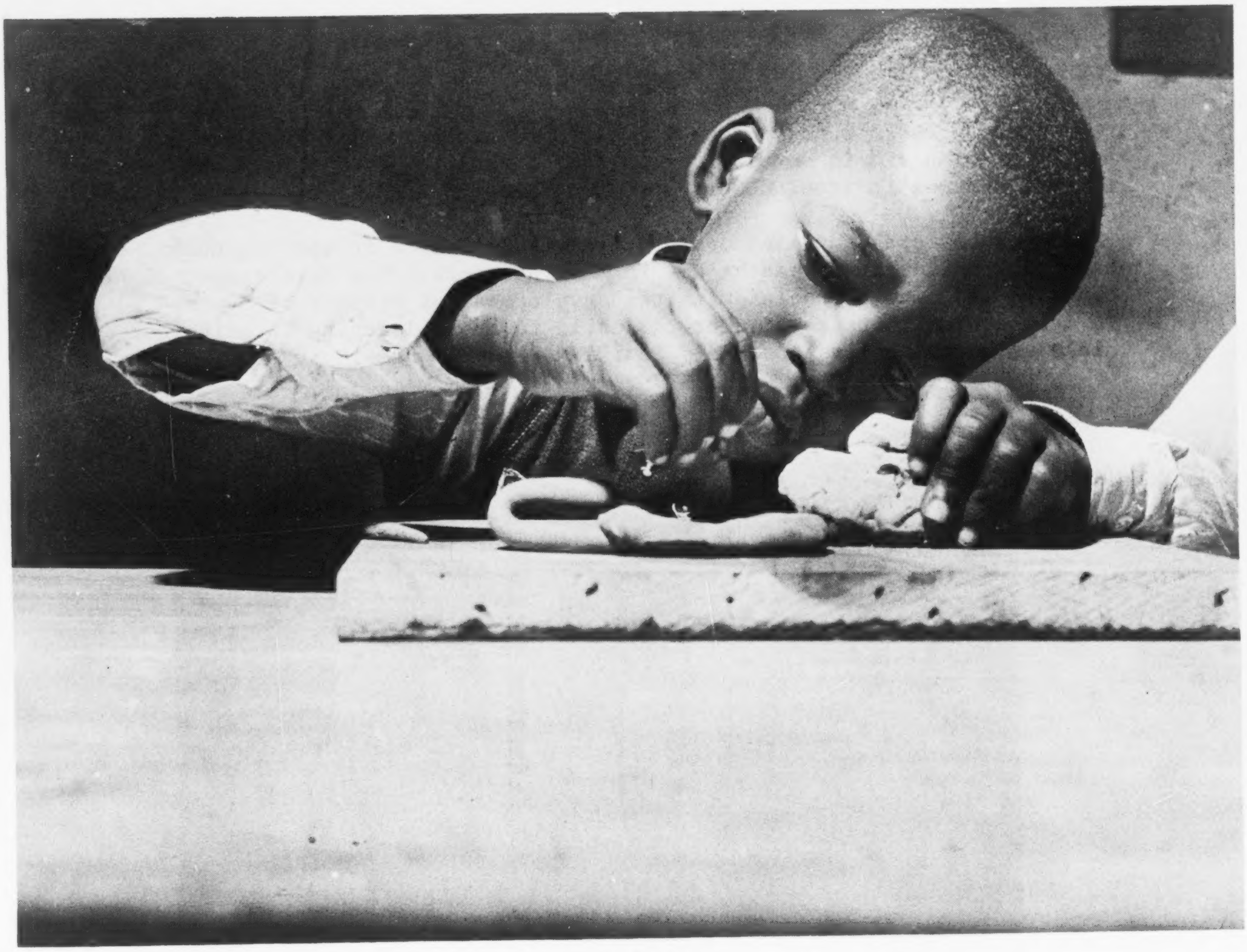
Building name with moveable alphabet.

Matching a snapshot of each child in the classroom with his name.

These games not only teach the child to recognize and read his own name, but also aid in developing his self concept. It will help the child to independence in labeling his work and free the teacher from this task.

A rubber stamp of each child's name is desirable in the beginning, so the young child can be taught how to mark his work. The development of his own name and own work helps with the development of respect of ownership. In this context, it is well for the child to avoid learning to write his nickname before he is thoroughly familiar with his name.

Adam
Amy
John
Ned



THE HAND

The hand's "efficient functioning leads to the highest discipline, intellectual and moral development . . .
Its incapacity puts a barrier between the idiot and everything to be acquired. The hand is the best servant of man, the best instrument of work, the best translator of thought . . .
It consequently transmutes what is a mode of thinking into a mode of being."

Seguin, E. Idiocy And Its Treatment By The Physiological Method. New York: Columbia University Press, 1907.

SENSORIAL EXPERIENCES AND EXERCISES

The curriculum of the Brookhaven Project will try to develop the awareness of the children to the world around them through the senses. Children need to use their senses with greater awareness so that they may develop to their fullest potential.

There is no point in giving a name to an object until the child has first experienced it. The child must first have correct sensory understanding, and then be able to label it with the correct word. He must then understand the differences and similarities in the things around him. When we give the child classification of things, he will begin to apply this knowledge to the world around him.

The knowledge and distinctions acquired at this age become part of the nature of the child. This knowledge gained by experience, becomes the basis of all culture. This reserve store of knowledge and experience the child will later use for higher learning.

To avoid misunderstanding and confusion, it is essential to isolate the quality the child is to experience. In the prepared environment, equipment is provided to stimulate and isolate the specific sense experience. For each sense there is apparatus.

A. Visual Sense: Material for visual discrimination in size and dimension, geometrical form, botanical form, and color. The materials that deal specifically with this sense are:

1. Pink Tower
2. Long Stairs
3. Broad Stairs
4. Cylinder Blocks
5. Knobless Cylinders
6. Geometric Cabinet
7. Geometric Solids
8. Constructive Triangles
9. Binomial and Trinomial Cubes
10. Color Tablets

B. Auditory Sense: Material for the discrimination of sounds. The materials that deal specifically with this sense are:

1. Sound Boxes
2. Bells

C. Tactile Sense: Material for the refinement of the sense of touch. The materials that deal specifically with this sense are:

1. Touch Boards
2. Touch Tablets
3. Baric Tablets
4. Fabric Box
5. Discrimination of Grains
6. Thermic Bottles

D. Sense of Smell: Material for the discrimination of scents. The material that deals specifically with this sense is:

1. The Smelling Box

E. Sense of Taste: Material for the discrimination of the four tastes: sweet, salt, acid, and bitter. The material that deals specifically with this sense is:

1. Taste Bottles

F. Education of Mixed Senses and Muscular Sensorial Activity: Stereognostic Sense (Muscular Memory) - The material that deals with this sense is:

1. Mystery Bag
2. Geometric Solids

Visual Touch:

1. Geometric Solids
2. Geometric Cabinet

Indirect Preparation for Writing:

A. Preparation of grip of fingers and muscular and visual preparation.

Material: Knobbed cylinders and plane insets.

B. Preparation for the hand to follow contours.

Material: Plane insets; sandpaper letters.

C. Preparation of the hand to keep within certain limits when holding the pencil.

Material: Metal Insets.

Indirect Preparation for Mathematics:

A. Recognition of dimensions.

Material: Long Stair, Broad Stair, Pink Tower.

B. Recognition of geometrical form.

Material: Geometric Solids, Constructive Triangles.

In addition to the prepared equipment and apparatus[*] designed to produce and isolate a specific quality of experience, there is the whole world of visual and auditory experience and natural phenomena that is going on constantly around the child. However, the teacher must be aware that the deprived child, possibly from a non-verbal home environment, may have no name for some of the most common experiences: wind, rain, sun, moon, ring, slam, bang, rattle, etc.

Therefore, it is most important that the teacher call particular attention to these common experiences, isolate them and, when possible, reproduce them for the class: bells ring, dishes rattle, water gurgles, drums boom, light flashes, etc.

For the Brookhaven Project the auditory and visual experiences and natural phenomena are here listed with exercises to be provided in seeing and hearing, with, in some instances, a vocabulary relevant to the experience.

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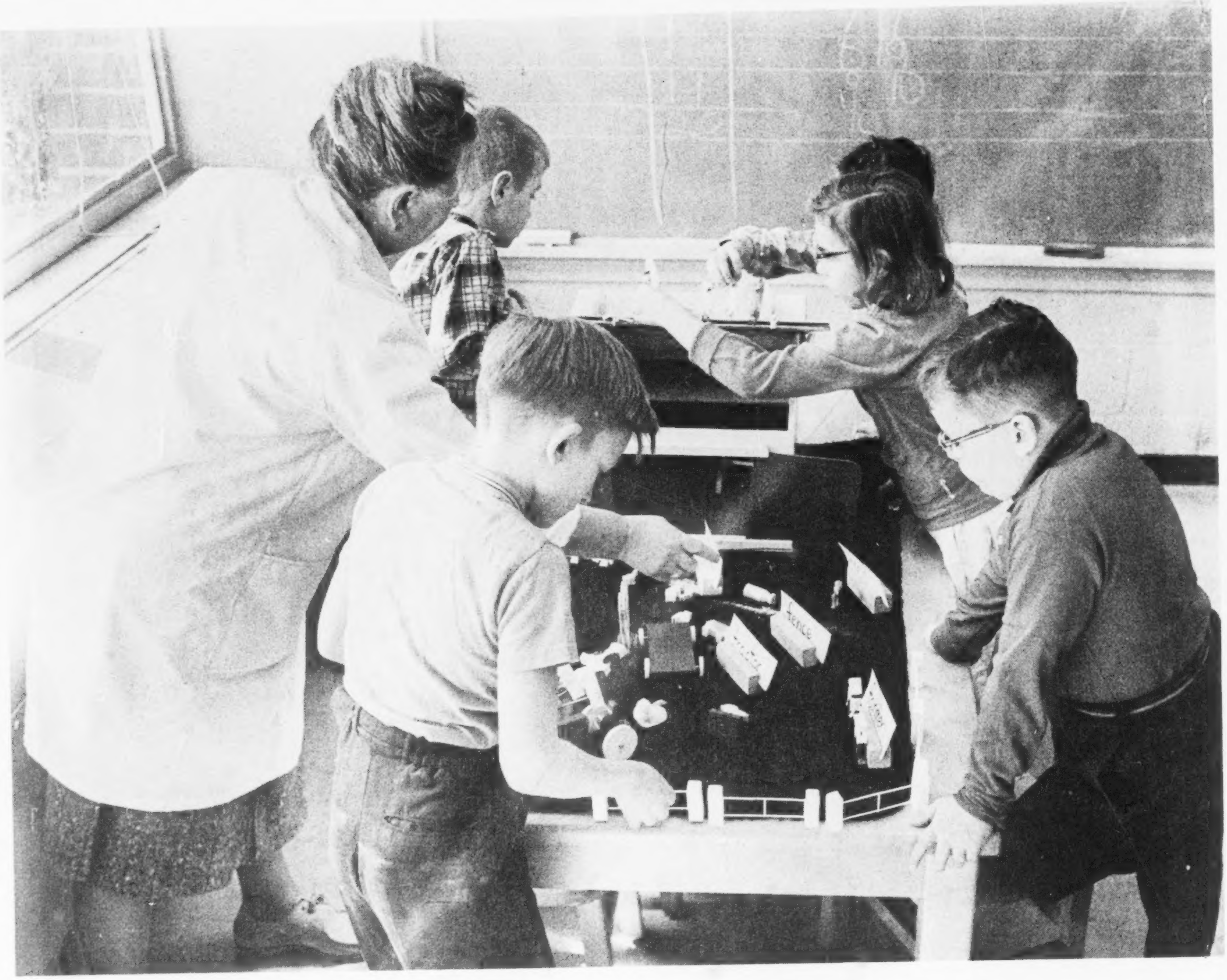
[*] Further information about these materials can be obtained from the American Montessori Society, 175 Fifth Avenue, New York, N. Y.



Beginning with the language or verbal facility each child has, the Teacher must gradually extend this facility and enlarge his vocabulary. In a certain sense, this pre-school program could be called a time for language training, training which, of necessity, must be carefully programmed. The techniques and experiences provided the child must stress the visual and auditory senses, with physical involvement and activity of the whole child.

Sound and Sight Experiences in the Language Arts

1. Sound experiences
    a. Imititating and identifying sounds
        1. human sounds
        2. animal sounds
        3. mechanical sounds
        4. nature sounds
        5. city sounds
        6. farm sounds
        7. zoo sounds
    b. Locating sounds
    c. Discriminating between sounds
        1. high and low sounds
        2. soft and loud sounds
    d. Phonics
        1. recognition of rhyming sounds
        2. recognition of similarities and differences in initial and final sounds of words
    e. Listening for information and enjoyment
        1. poems
        2. stories
        3. records
        4. television
        5. radio
        6. movies
        7. dramatizations and puppet shows
        8. other people
    f. Understanding vocabulary met in listening activities
        1. ears
        2. hear
        3. listen
        4. loud and soft
        5. near and far
        6. buzz
        7. clang
        8. toot
        9. whistle
        10. whisper
        11. cry
        12. honk
        13. high and low (pitch)
        14. call
        15. shout
        16. scrape and scratch
        17. crackle, snap, and pop
2. Visual experiences
    a. Noting characteristics and relationships between objects
        1. shape
        2. color
        3. size
        4. position
    b. Classification of objects
        1. people
        2. animals
        3. plants
        4. furniture
        5. toys
        6. transportation
        7. communication
        8. earth and sky

c. Understanding vocabulary met in visual activities

1. see
2. look
3. eyes
4. light and dark
5. near and far
6. day and night
7. color and color words
8. big and little
9. long and short
10. wet and dry
11. old and new
12. rain, snow, sleet, hail
13. sun, moon, stars
14. autumn, winter, spring, summer
15. thermometer
16. calendar
17. shadow
18. outdoors and indoors

Sound and Sight Experiences in Arithmetic

1. Sound experiences

a. Counting of sounds

b. Measuring and estimating of sounds

1. loudness and softness
2. duration of sound
3. near and far sounds

c. Understanding vocabulary met in arithmetic sound experience

2. Visual experiences

a. Discriminating shapes

b. Measuring and estimating

1. size
2. location
3. relative distance

c. Recognition of groups of objects and people

d. Ordinal and rational counting

e. Use of calendar

f. Telling time

g. Understanding vocabulary met in visual arithmetic experiences

Sound and Sight Experiences in Science

1. Auditory experiences

a. Air

1. sounds of wind
2. flight
3 wind instruments
4. fire
5. wind mills
6. flapping of flags

b. Water

1. blowing bubbles
2. movement of water
3. steam and boiling
4. water traveling through plumbing

c. Insects and Animals

1. animal, bird, and insect calls

d. Solar System

1. day and night
(1) stillness at night
(2) sounds of daytime activities

e. Weather

1. seasonal sounds
2. sounds of the elements
3. wind sounds

f. Sound

1. vibration
2. musical instruments
3. machine sounds

g. Heat and Light

1. fire crackling, popping, and roaring
2. boiling
3. steam
4. frying
5. popping of corn
6. sizzling

h. Magnetism and Electricity

1. bell
2. buzzer
3. click of switches

2. Visual experiences

a. air

1. movement resulting from wind or air currents
(a) kites; (b) leaves; (c) birds and insects
2. changes involving air
(a) fire; (b) steam; (c) bubbles; (d) smoke

b. Water

1. moving water
(a) bodies of water; (b) water in plumbing, rainspouts, etc.
(c) rain, sleet, snow, hail; (d) steam
2. still water
(a) water in containers; (b) other liquid in containers;
(c) puddles

c. Insects and Animals

   1. observation of characteristics and habits
   2. identification
   3. grouping

d. Weather
   1. seasonal changes
   2. weather instruments
      (a) weather vane; (b) thermometer; (c) rain gauge; (d) wind sock
   3. conditions of weather
      (a) rain; (b) sleet; (c) hail; (d) snow; (e) frost; (f) clouds; (g) sun; (h) rainbow

e. Heat and Light

   1. shadows
   2. fire
   3. effects of heating -- boiling, steam, popping of corn
   4. light and dark, night and day
   5. sun, moon, stars

f. Magnetism and Electricity

   1. effect of magnets on materials
   2. static electricity
   3. application of electricity -- home appliances, lighting equipment, machinery, transportation, communication

Sound and Sight Experiences in Music

1. Auditory experiences

   a. Identify simple musical instruments by sound
   b. Note pitch relationships
   c. Motile response to rhythm
   d. Learn simple songs

2. Visual experiences

   a. Identification of common musical instruments by sight
   b. Playing rhythm band instruments
   c. Watching musical performances

Sound and Sight Experiences in Health and Safety

1. Auditory experiences

   a. Listening to directions
   b. Noting traffic sounds -- sirens, automobile horns, police whistles, bicycle horns
   c. Steam and boiling water
   d. Awareness of sounds of fire

2. Visual experiences

   a. Obeying traffic signals and signs
   b. Keeping stairways and floors clear of obstruction
   c. Selection of foods
   d. Noting cleanliness
   e. Good health procedures

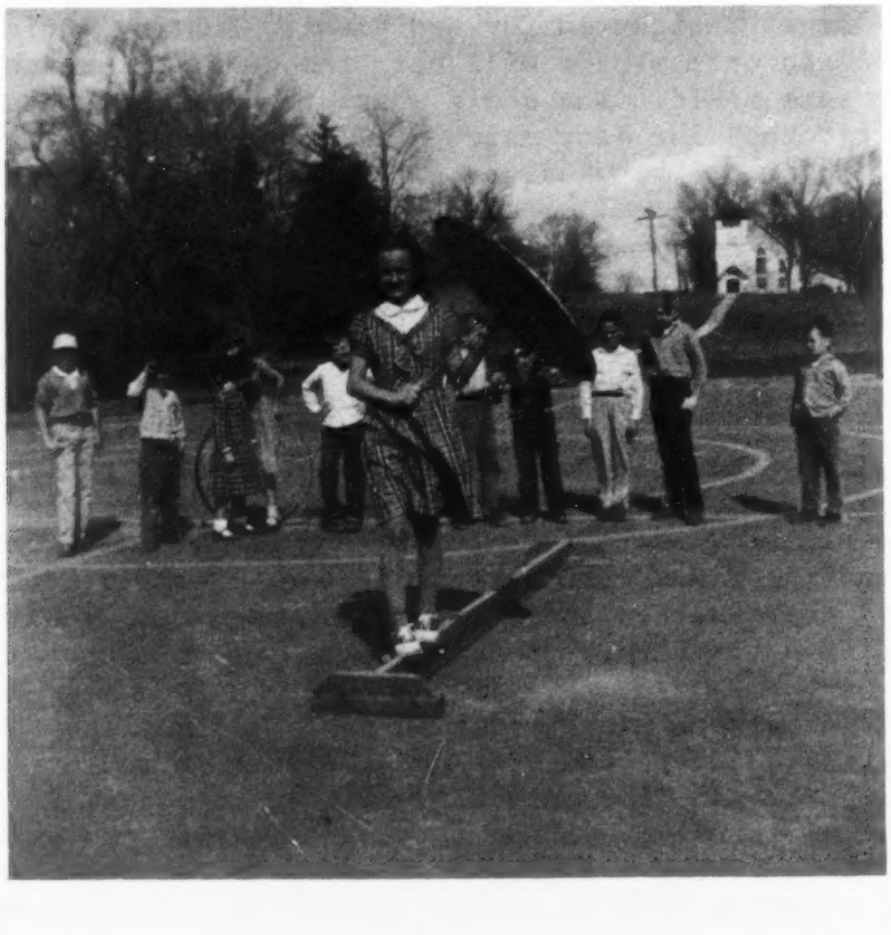
Sound and Sight Experiences in Physical Education

1. Auditory experiences

   a. Rhythms and response to music
   b. Folk dancing to music
   c. Following directions in individual and group activities
   d. Singing games
   e. Games based on locating and identifying sounds
   f. Listening to participation of other players

2. Visual experiences

   a. Body movements
   b. Use of equipment in exercises and games
   c. Following actions of participants or leader
   d. Watching demonstrations



PRACTICAL LIFE EXERCISES

Practical life experiences must be provided for the child whose home may be lacking in the equipment, materials or tools he will encounter outside that home -- at school and as a working adult.

Practical life exercises are introduced to very young children. They involve all of the operations necessary for keeping the classroom and equipment in good working order, as well as providing the tools and materials necessary for the care of the child's person; and introducing him to the various forms of socially acceptable behavior and courtesies.

Practical life exercises are not left to chance. The teacher demonstrates every exercise, be it scrubbing a table or polishing a shoe. In this manner, the child learns an efficient way to complete a given task. Demonstration in scrubbing a table might be given to the whole class as a group lesson, or taught again to a child individually. One will observe that children will scrub or polish a table or shoe over and over again. A small child or a retarded child is not motivated in the same way as a grown-up; they enjoy the process of work. They enjoy doing a task over.

To help the non-reader and the other members of the class to keep order and return things to their proper place, it is very helpful to keep things in baskets or boxes displayed on shelves. Today's colored tapes are helpful in marking off areas designated for equipment. Putting a piece of red tape on a brush and on a mirror will help the child to remember to return both to the same shelf. The shelf where these belong should have lines of the same red tape for easy matching. For each basket or box of equipment, another color can be used and a lot of confusion thereby be eliminated.

The practical life exercises should include the proper handling of stationary and art materials. The proper care and handling of these materials will free the child to create without the frustrations of not knowing how to wash a paint brush properly or open a paste jar.

The exercises should also include the pouring of rice, pouring of water, and handling the dressing frames. Even though our kitchen dishes may be unbreakable plastic, there is value in providing some experience in carrying and handling glass, pottery, and china. Such activities improve the child's coordination and skill. They ready the young child and the slow learning child for academic work.

One can provide classroom experiences in table setting and table manners by celebrating holidays and birthdays. Packaged and pre-mixed foods simplify the practical life exercises related to food. For example, making jello, cookies, lemonade, baking a cake, preparing cup cakes for a child's party all teach skills and provide a sense of doing things for others. Following a party, washing dishes, polishing silver, cleaning the table and floor increase the child's range of experience.

To Montessori the exercises of practical life were of great importance in teaching the child to complete a job well, a job that is serving the needs and comfort of others who are dependent on him. To sweep a floor, to wash a table, to polish a window so that the sun may come in--these are not small jobs to be rushed out of the way as hastily as possible, but important parts of the socialization of the child. We learn to do these humble tasks well for two reasons, essentially: every job should be done well for its own sake and for the practice it offers in achievement; and these jobs will be necessary throughout our lives as a way of showing our concern and love for others.

MILLIONS OF CATS

This is the Way We Wash our Hands

The mother shows her love for her family by keeping a neat house, by dressing her children in freshly-washed and ironed clothes, by putting well-cooked food on the table. Most of the tasks she will perform for her baby are menial--washing him, changing his diaper, preparing his food--but through these chores she manifests her love for the baby, and his response will be determined by how she handles him.

The father is not only a breadwinner who contributes his paycheck and nothing of himself to his family. He is responsible for the small repairs, perhaps for the garden that adds to the family food supply, perhaps for building toys for his children. He shows his love by fixing a child's broken bicycle, by sanding and painting wood for blocks, by helping his son build a model.

The necessity, the dignity, the beauty of humble tasks well-performed must be taught to the trainees and the aides by the example of the resource people, who must not be ashamed to demonstrate their own familiarity with the broom or the mop. Cleanliness and order are the prerequisites for learning, and the creation of this order is a job demanding respect. Resource people should treat cooks, janitors, kitchen aides, with the respect their work earns, not with the contempt that better-educated people all too often show to such manual workers.

Once, rebuking one of her Carmelite Sisters who was too intent on praying to lend a hand to the manual activites of her convent, the great St. Teresa of Avila reminded the Sister that God could be found indeed among the pots and pans! The motto of the Benedictine Order, oldest monastic order in the West and preserver of much of the ancient culture through the Dark Ages, is: Orare et Labore, Prayer and Work. The monks saw no contradiction between scholarly and artistic activity on the one hand, and on the other, draining swamps, cultivating fields, raising livestock and preparing their own foods.

Manual activity is a necessity in creating the whole person.

A teacher who attempts to use these ideas will have to assess her classroom and the background of the children to understand what they will need for the mastery of the environment. Before attempting to teach any of these practical life exercises, the teacher should be sure of all of the steps necessary to carry out a project. She should analyze all the steps to be able to teach them in the most efficient way, from the standpoint of time as well as money.

The following are suggested Exercises of Practical Life:

I. Exercises with Water

With very little children, start with pouring rice from one vessel to another, then go on to the water exercise.
Pouring water from one vessel into another.
Filling a jug.
Pouring water into a cup.
Washing hands.
Washing the top of a table.
Washing and drying glasses.
Washing and drying plates.
Washing and drying silver and cutlery.
Cleaning the glass of windows and pictures.
Washing house linen, wringing and hanging to dry.
Washing little towels and dusters.
Changing water in flower vases.
Watering flowers in flower pots, either carrying them outside or spreading oilcloth underneath.

II. Exercises in Carrying.

Carrying chairs.
Carrying packets.
Carrying flower pots and putting them out of doors.
Carrying cups, saucers, cutlery, glass, etc. for meals.
Carrying newly-ironed linen in baskets.
Carrying objects and placing them correctly in cupboards.
Hanging dusters on rails and clothing on pegs or hangers.
Putting away hats and shoes in their places.

III. Exercises in Polishing.

Polishing tables.
Polishing brass.
Polishing shoes.

IV. Exercises of Opening and Shutting.

Opening and shutting room doors silently, holding them with one hand to prevent their banging.
Opening and shutting cupboard doors.
Opening and shutting windows.
Opening and shutting drawers.
Opening and shutting boxes and trunks, with different kinds of lids and fastenings, e.g., latches, bolts, keys, padlocks.
Opening boxes with secret springs and adjustments.
Fastening window shutters.

V. Care of the Environment Indoors.

- Setting chairs, tables, etc. in order after use.
- Putting away objects after use.
- Sweeping floors.
- Sweeping mats.
- Dusting.
- Laying the table.
- Clearing the table.
- Washing up.
- Washing and polishing furniture.
- Washing and polishing floors.
- Cleaning silver.
- Cleaning brass.
- Cleaning windows and pictures.
- Washing and ironing house linen.

VI. Care of the Environment Outdoors

- Weeding.
- Picking dead leaves from plants.
- Sweeping up fallen leaves.
- Raking.
- Watering.
- Digging.
- Hoeing.
- Protecting delicate plants.
- Tying muslin over fruit to protect it from insects, etc.
- Gathering fruit in small baskets.
- Laying fruit or vegetables in the sun to dry.
- Gathering wood in bundles and carrying it in.
- Tying up herbaceous plants.
- Collecting vegetables.
- Fetching eggs from the hen house.
- Feeding poultry, pigeons, and other animals.

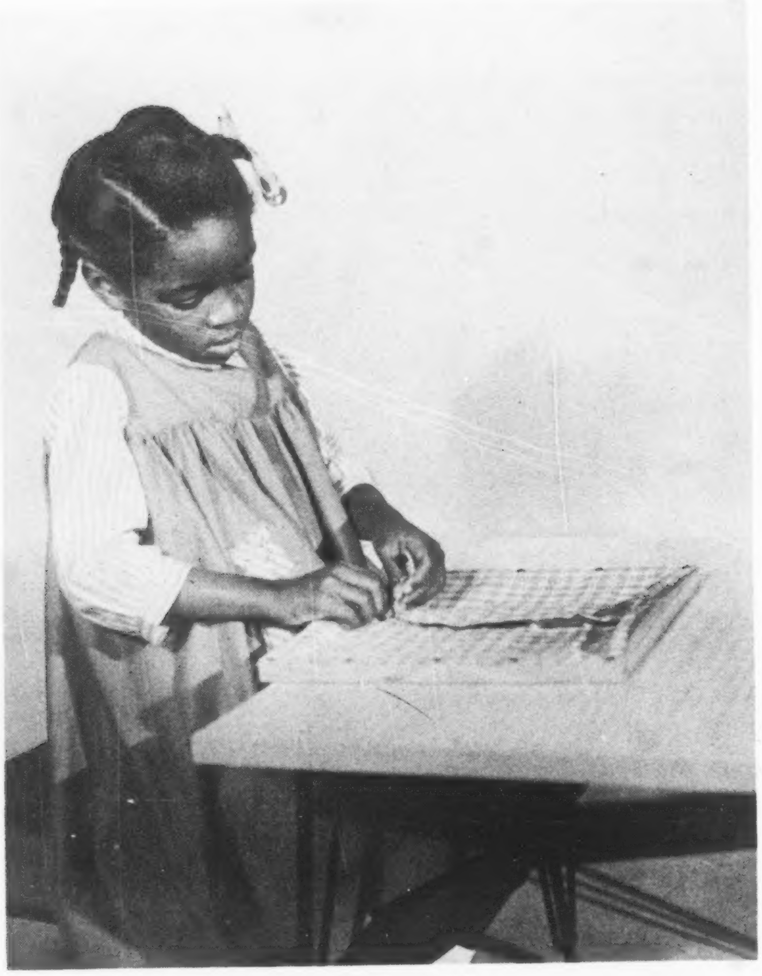
VII. Care of the Person

- Washing hands.
- Cleaning teeth.
- Taking a bath or shower bath.
- Washing hair.
- Brushing and combing hair.
- Rinsing the mouth and gargling.
- Manicuring the nails.
- Brushing clothes.
- Cleaning spots from clothes.
- Cleaning boots and shoes.
- Folding clothes.
- Washing and ironing clothes.
- Dressing and undressing.

VIII. Social Relations.

- Bowing, shaking hands and other forms of greeting.
- Offering something to someone.
- How to invite someone to come in, to be seated.
- Making way for someone to pass.
- Picking up what someone has let fall.
- Setting right what someone has done wrong by mistake.
- Accompanying someone.
- Begging pardon.
- How to avoid disturbing other people, by passing behind.
- How to blow one's nose.
- Seeing one is clean and tidy before presenting oneself.
- Washing before and after meals.

When the child is permitted to do real work, meaningful constructive activities, he finds a direction for his inner energy. When he derives joy and satisfaction for the work, he has discovered the pleasures of work and has no need for other incentives, tangible rewards or even praise. In fact, inducements or rewards tend to disrupt the child's -the working child's- concentration.



DRESSING FRAMES

The child learns to fasten and unfasten his clothes on these simple wooden frames. If he uses the material incorrectly his mistake is soon apparent to him. These self correcting materials give the children the comforting and rewarding experience of working quietly by themselves without fear of a mistake being exposed to their classmates. Such sensorial materials self-correcting and easily programmed are consistent with the teaching machines of today.

> "There is a great need for increased utilization of teaching machines and programs, automated learning for deprived children, . . . Special education programming can be geared to the culture and thinking of the deprived child. Since the child can proceed at his own rate, there is less chance for the development of shame or anxiety on the part of the slow youngster."

Riessman, Frank. The Culturally Deprived Child. New York: Harper & Row, Publishers, Inc., 1962.

POURING RICE

For centuries, the hand trained, but not always by means of special apparatus. The common things of daily life have even greater educational value when the hand can use them. Seguin attached the greatest importance to the scientific education of the hand, for its efficient functioning leads to the highest physical, intellectual and moral development, while,

". . .its incapacity puts a barrier between the idiot and everything to be acquired. . . The hand is the best servant of man; the best instrument of work; the best translator of thoughts; the most skillful hand is yet, in respect to certain realizations, as it were, idiotic; our own hand shrivels before we suspect the thousands of ideas which it might realize. . . It alters the surrounding bodies into likeness of some ideal, which much pre-exist in the mind; it consequently transmutes what is a mode of thinking into a mode of being."

Seguin, Eduard, Idiocy (op. cit.) page 78.

GEOMETRICAL INSERTS

Metal frames, with geometrical inserts which can be lifted out of the frame with a small knob on the insert. The children can feel the form and outline or trace them with a pencil. At first the children merely fill in the outlines with pencil, but as they become more adept at handling the forms the combine them with each other, gradually discovering more and more possibilities.

> ". . .discovery is in its essence a matter of rearranging or transforming evidence in such a way that one is enabled to go beyond the evidence to new insights. . .to the degree that one is able to approach learning as a task of discovering something, rather than learning about it, to that degree the child will be . . . rewarded by discovery itself."
>
> Bruner, Jerome S., On Knowing (1962)
> Harvard University Press, Cambridge

SANDPAPER LETTERS

PURPOSE:

Learning to recognize the forms by touch and sight and to know the sounds of all the letters of the alphabet.

Gaining muscular memory of the form of the letters through touch, as a preparation for writing.

Understanding the composition of words and beginning to analyze them into their component sounds.

MATERIAL:

Each letter of the alphabet is cut from fine sandpaper and mounted on strong cardboard. Patterns for the letters can be found on the pages following. The vowels are mounted on blue cards and the consonants on pink. The large letters are mounted on larger cards and the small on smaller. The letters are on the right hand side of the cards so that there is a space on the left hand side for the child to hold the card steady.

PRESENTATION:

The teacher takes any two letters to the child's table. She chooses two which contrast in shape and sound. She sits beside the child and shows him how to feel the shape of the letters with the index and middle finger of the hand which will hold the pencil in writing. At the same time she tells him the sound of the letter. She gives each letter in turn, using the Three Period Lesson. At each stage she asks the child to feel the letters. At the end of the first lesson, she gives him the idea that words are composed of these letters, which leads to the next step in which the child analyzes words into their component sounds.

Suppose the teacher has taken c and s. She will say "Can you hear c when I say cat?" "Can you hear c when I say car?" "Can you think of any words with a c sound in them." She should do the same with the s.

The child learns through the three senses: hearing, touch and sight. Great care must be taken when teaching the child to feel the letter to see that he starts where one would normally start in writing and to see that he traces the letter through in the direction of writing. He must keep his fingers on the letter from start to finish except for the dots on the i and j and the cross on the t (and f where the script alphabet is used).

The simple cursive form of the letters is recommended but the script ones are also made for those teachers who prefer them.

EXERCISE:

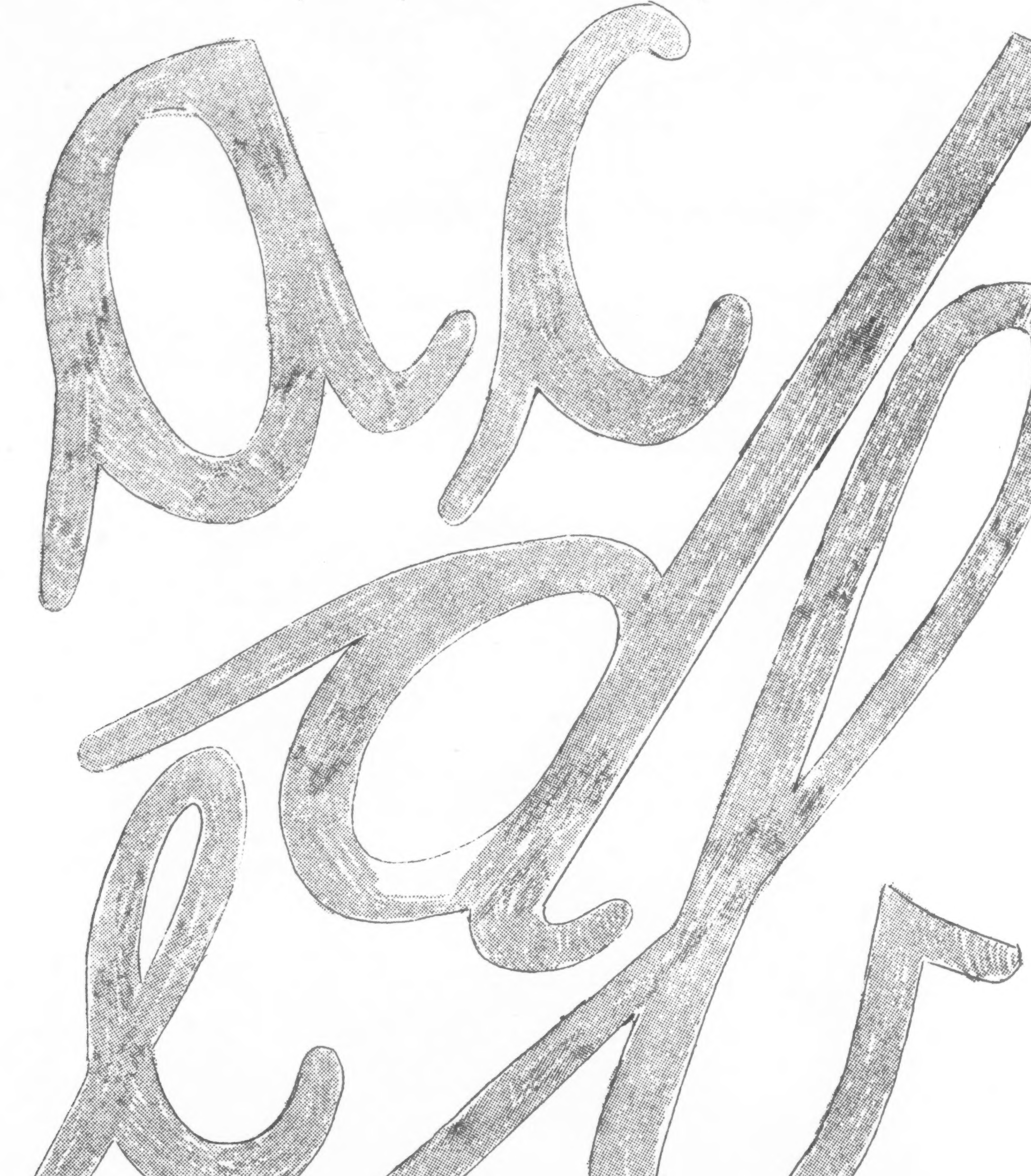
The child takes any letters he knows, traces the form of the letters with two fingers and says the sound of the letters.

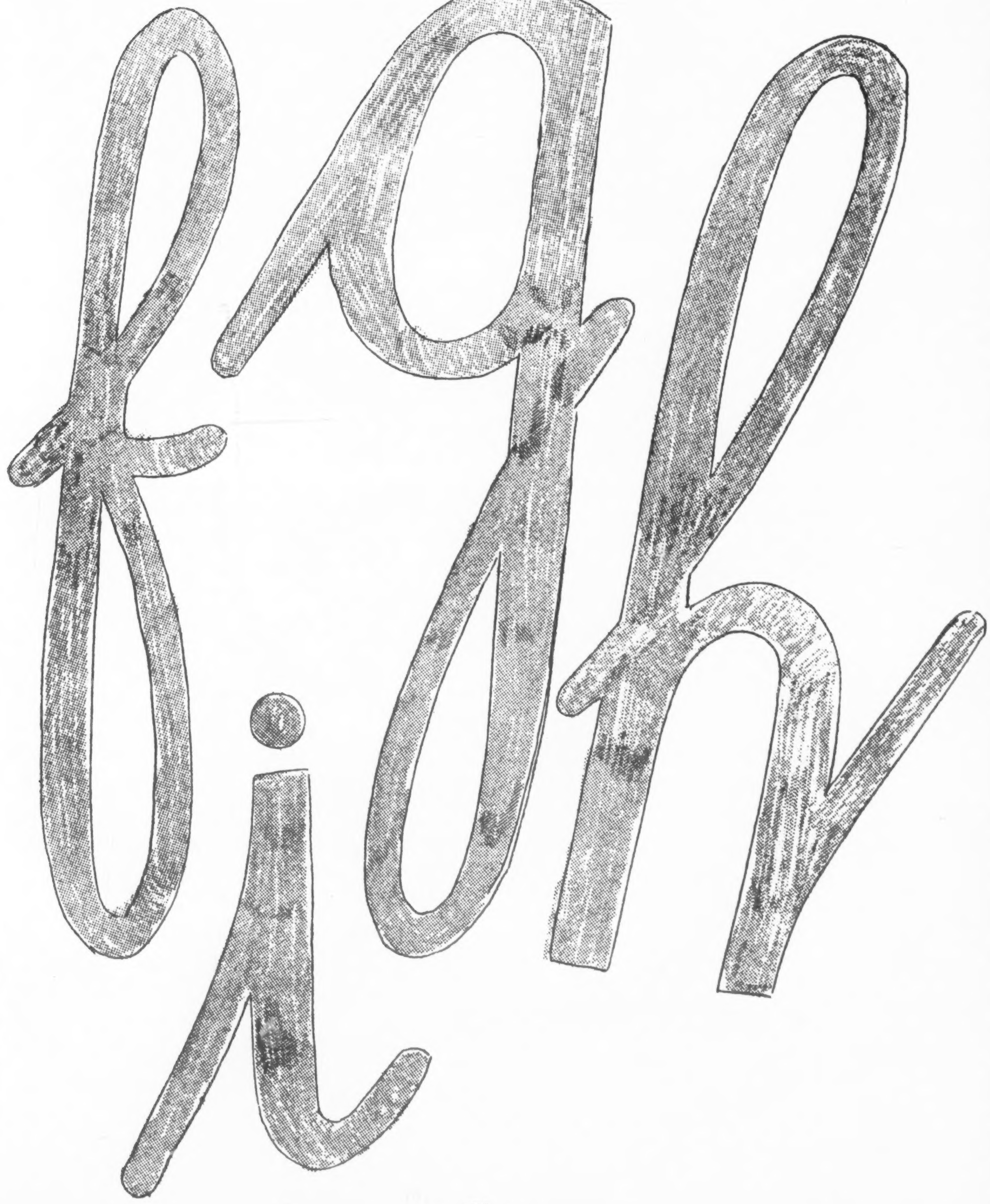
The teacher gives him more letters as he is ready for them, or he can take any letter and go to her to be shown how to feel and sound it.

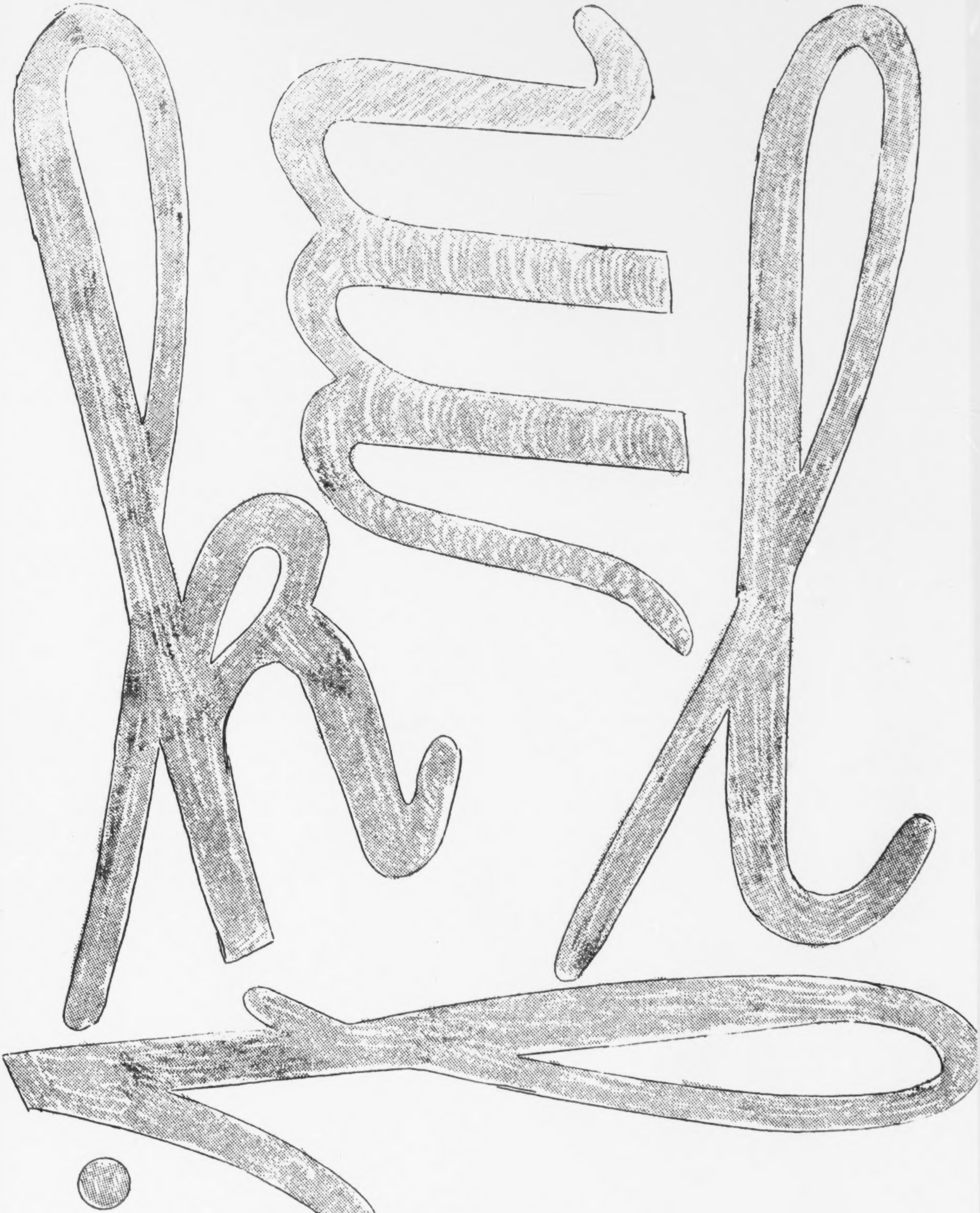
CONTROL OF ERROR:

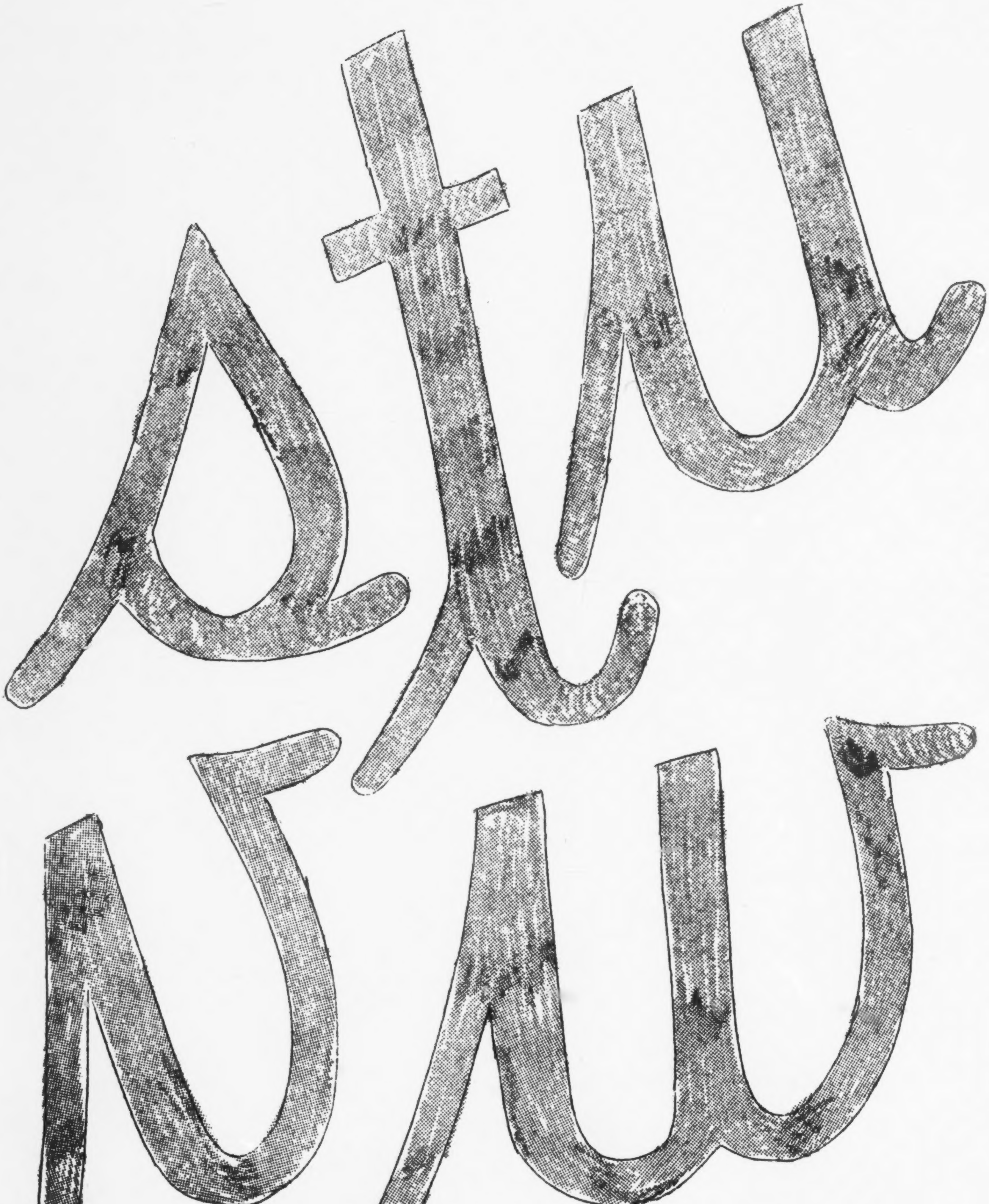
If the child's fingers move off the sandpaper, he knows at once by the different texture of the surface.

Sandpaper Alphabet




f
g
h
i

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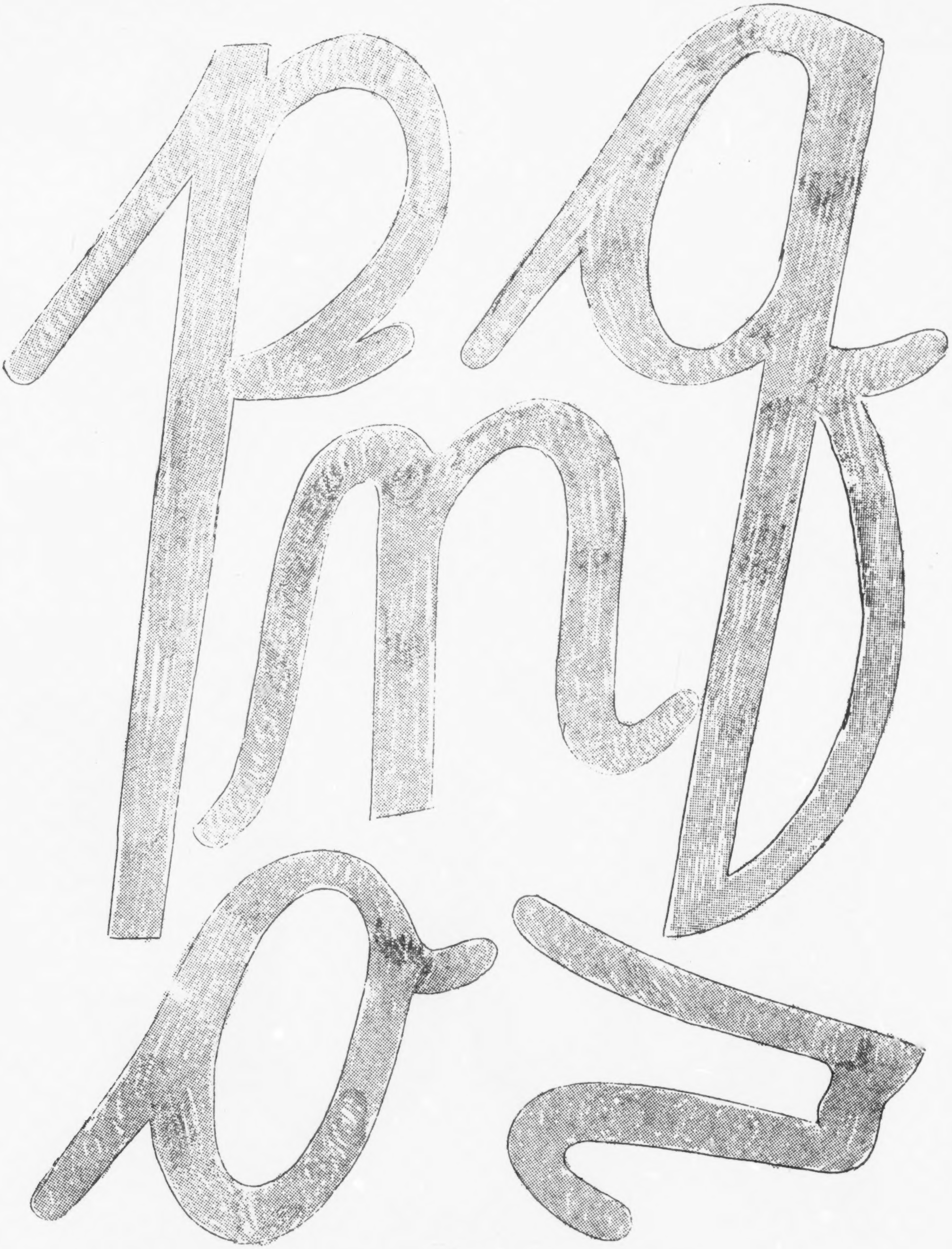
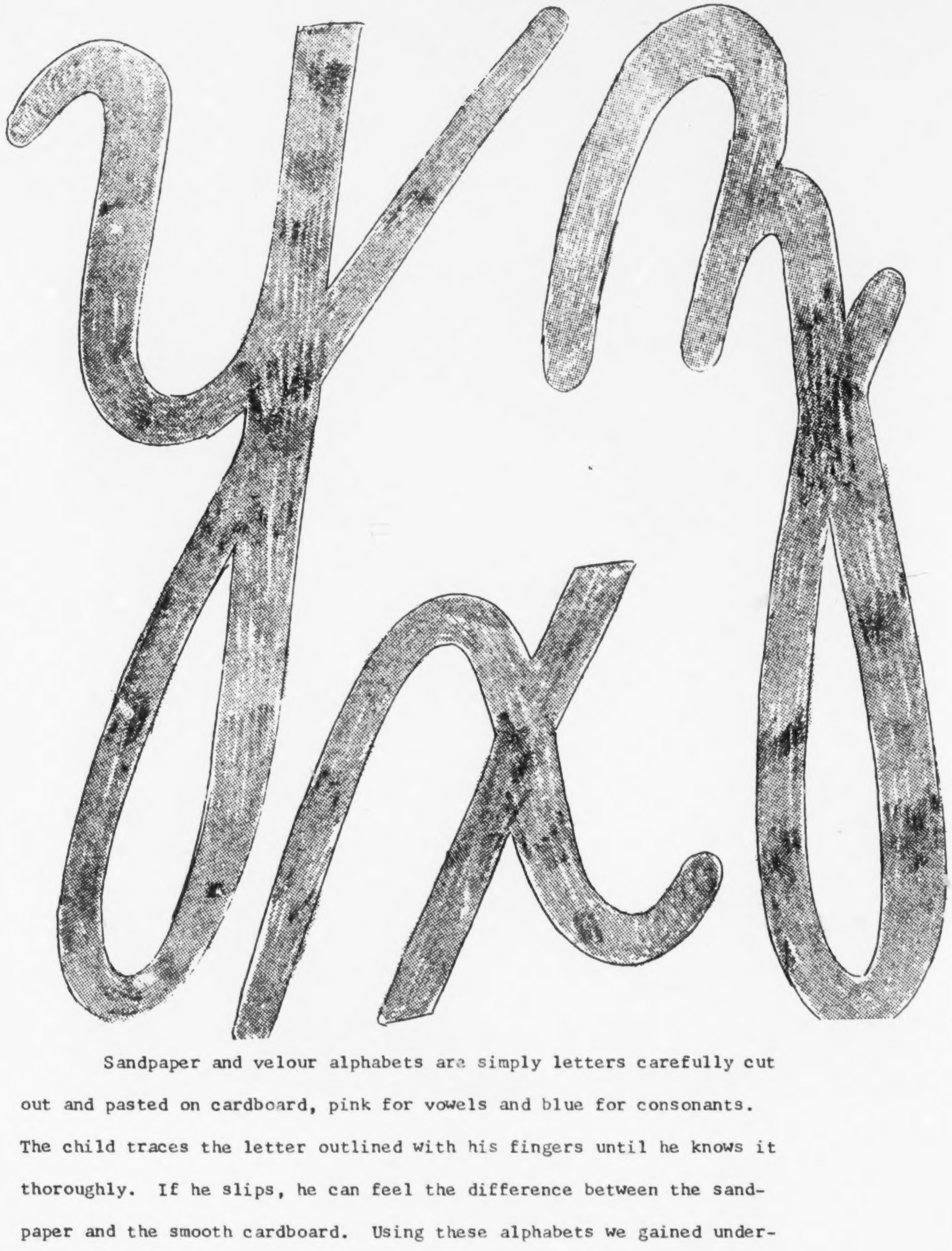




Sandpaper and velour alphabets are simply letters carefully cut out and pasted on cardboard, pink for vowels and blue for consonants. The child traces the letter outlined with his fingers until he knows it thoroughly. If he slips, he can feel the difference between the sandpaper and the smooth cardboard. Using these alphabets we gained understanding of another Montessori principle--the control of error and the importance of devising means for such control; in other words, those principles which are built into programmed learning.

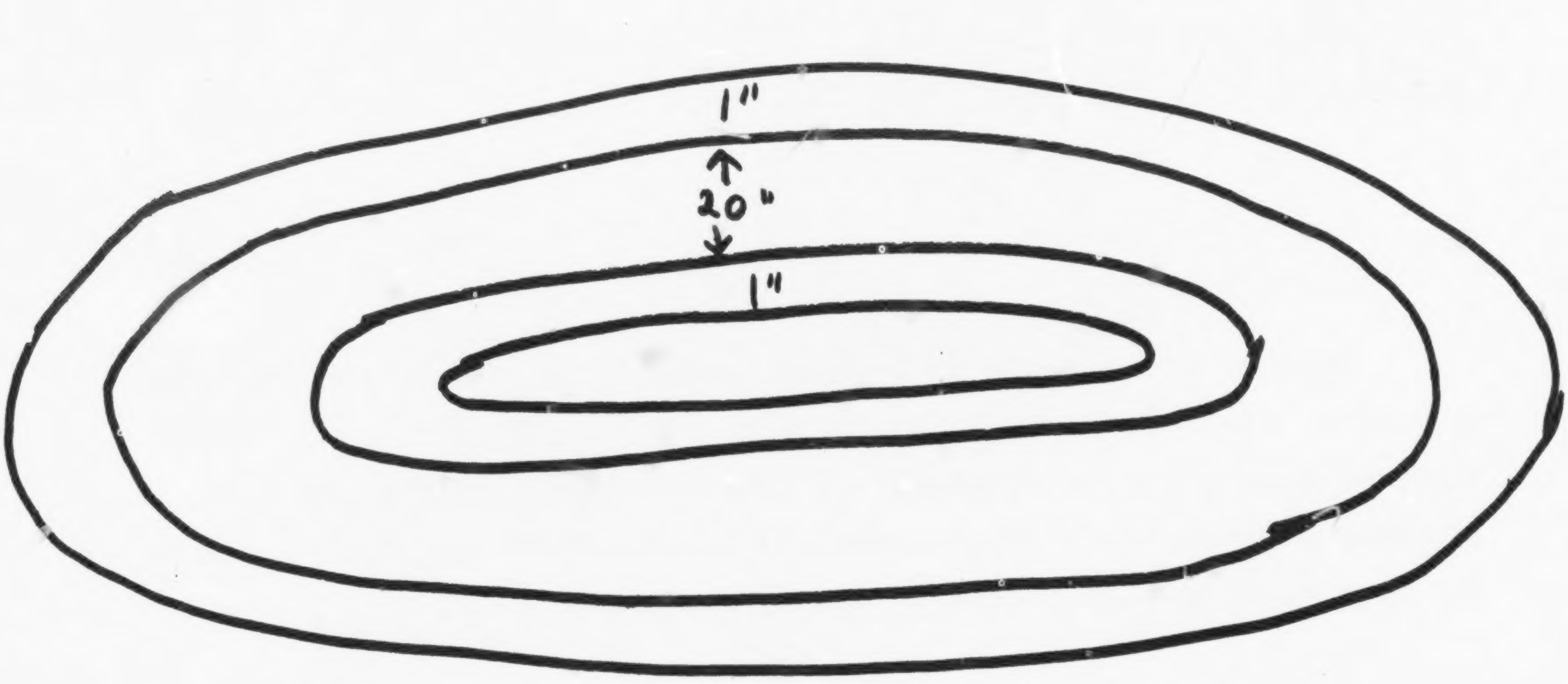
Whether one regards the physical manipulation of sensorial materials as aids to effective communication between teacher and child, or as means to increase motivation, the conclusion is inescapable that children with limited experiential backgrounds study mathematics more effectively when they have the opportunity to handle suitable sensory materials

Walking on The line

Walking on The line is a simple exercise of great value. It requires no unusual equipment.

A line is drawn on The floor with chalk, or marked out with masking ~~tape~~, if a permanent painted line is not possible. It should be 1" wide, and in as wide an oval as The room will allow.

If The room is large enough, a second, smaller oval can be placed inside The first so That slower children, or children with impaired muscular control, may proceed at Their own, unforced pace.



20" from wall

EXERCISES OF MOTOR SKILLS

More than 50 years ago, Dr. Maria Montessori pointed the way to developing academic and intellectual abilities through muscular coordination exercises. Her ideas were revolutionary in her day, but are now being rediscovered and widely adopted by educators throughout the country.

A study, made by the Indiana State Board of Health, of children in the Lafayette, Indiana, public school system, and conducted by Professor N. C. Kephart and Professor C. C. Cowell of Purdue University, indicated that it was possible to predict the I.Q. on the basis of certain tests of muscular coordination. For boys, the predictions were accurate 82.2% of the time and for girls, 85.7% of the time. In his book, The Slow Learner in the Classroom, Dr. Newell Kephart states further that he believes that the development of perceptual-motor abilities has an effect on academic achievement. He feels that breakdowns in the orderly development of a child's learning in the early grades can be traced to a lack of earlier orderly development in muscular coordination and control.

Research has shown that as children improve in coordination, their readiness to improve in other areas also occurs. Academic achievement apparently goes hand-in-hand with muscular control and coordination, for as the child is able to free more and more of his attention from the physical problems of movement, control and mastery of himself and his equipment, he is able to direct his attention toward other areas.

To stimulate such orderly development of muscular coordination, Dr. Montessori originated several exercises. She used the interests of early childhood as their base: running, jumping, racing, chasing, building, pulling, painting, pouring.

One of the most successful, and one of the easiest to set up in a classroom, is known as:

"The Line"

It is based on the well-known fact that children like to walk on lines or fences, and to balance themselves. The exercise helps to develop coordination of body and perception, and increase awareness of laterality as well as of balance.

All that is needed to present this exercise is to draw a large elipse on the floor of the classroom with chalk, paint or tape. Masking tape wide enough for the child to be able to place his foot on the center of the tape is particularly good. The child walks on the line, being careful to place one foot directly in front of another.

As his skill increases, a glass of water may be carried, or a bean bag on the head, a flag or a bell. If the child's attention wavers, the water may spill, the flag fall or the bell tinkle. Children also are helped by counting while walking on the line, stepping heavily on the count of one and lightly on the counts of two and three. Developing this rhythm establishes communication between feet and brain.

Another variation of the exercise is to add music. This helps the children's sense of rhythm. Musical instruments such as the drum and the triangle also interest the children while they are marching.

The exercise has value on rainy days or days when the children cannot participate in active games. It provides a physical challenge to them and acts as a tension reliever.

THE BALANCE BOARD AND BALANCE BEAM

Herein later described and illustrated, the Balance Board and Balance Beam are more demanding tools requiring greater motor control, coordination and skill in maintaining direction and balance.

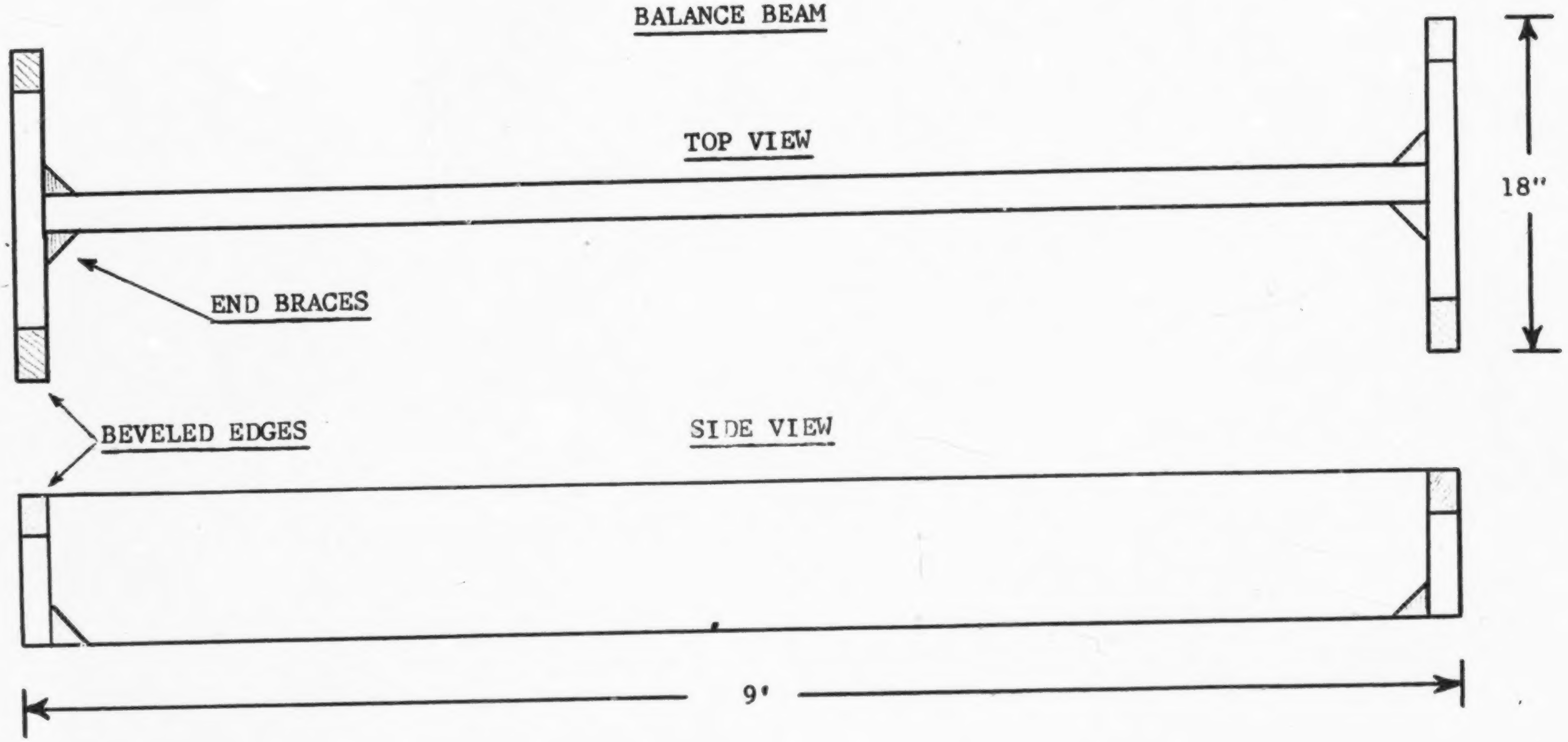
And there is

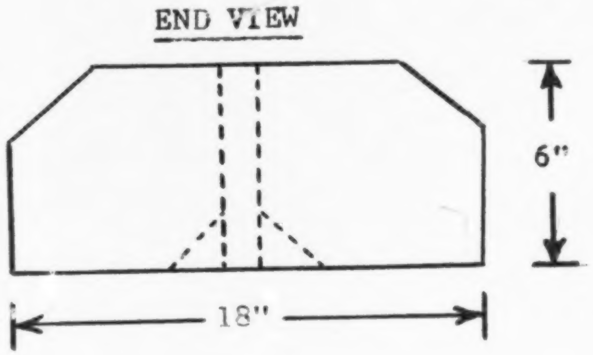
HAND AND FOOT PRINTS

> " . . . footprints or forms are arranged on a floor at irregular intervals, pointing in different directions and taking unexpected turnings: and along these the pupil has to tread his course, placing his feet exactly on the forms.
>
> " . . . The act of directing each foot on each form is one of the best exercises for limbs which previously escaped all control; but what a superior exercise for the head above which has never suspected its regulating power. To walk among so many difficulties is to think."

Seguin, Eduard. Idiocy, and Its Treatment by the Physiological Method (1866) pages 75, 76.

BALANCE BEAM


TOP VIEW
18"
END BRACES
BEVELED EDGES
SIDE VIEW
9'


END VIEW
6"
18"

MATERIALS NEEDED:

One 12 foot by 2" by 6" oak board.
(use the pieces cut from the beveled edges to form the end braces)

COST:

Lumber:	$2.40
Screws:	$ .40
Shellac:	$ .89
Total:	$3.69

BALANCE BEAM

PURPOSE:

To develop conscious coordination, grace, and good sportmanship.

One of the important results is the child's feeling of success when the course has been run!

MATERIAL:

One nine foot long oak beam braced on either end and adjustable to various heights.

EXERCISE:

Any variation of walking the beam.

Suggestions:

1. Walking with a flag in the hand; then two flags.
2. Carrying a cup of water without spilling; a cup of rice.
3. Walk forward on beam, arms held sideward; then walk backward.
4. With arms held sideward, walk to the middle; turn around and walk backward.
5. Walk forward to the middle of the beam, then turn and walk the remaining distance sideward left with weight on the balls of the feet.

READING AND STORY TELLING

So much is new and strange, mysterious and unexplored to small children, that exposing and burdening them with fanciful tales and additional unexplainable facts and events may only further confuse them.

Very young children enjoy stories about themselves and their environment. Thus, a story in which the child's name is used and which contains descriptions of the classroom, the play-yard, other students and activities is most appropriate. Such a story lends itself to countless variations. As the story becomes familiar, the teacher can encourage the attentiveness of the children by asking one and then another to finish sentences during the story.

One might also develop stories about places visited, people seen and things noted. The recall of a trip thus stimulated can contribute to vocabulary development and an awareness of sequences of events.

One need not be concerned over repetition, since the thrice-told tale is enjoyed even more by the pre-schooler.

> "When the child has advanced to some extent in the exercises of interpretation, the teacher may begin reading aloud. This should be done as artistically as possible. We recommend for the training of teachers not only a considerable artistic education in general but special attention to the art of reading. One of the differences between the traditional teacher of the past and the teachers we should like to create is that the former used to speak of an 'art of teaching,' which consisted of various devices to make the child learn, in spite of itself, what the teacher wanted to teach. Our teachers, rather, should be cultivators of the fine arts. For in our method, art is considered a means of life. It is beauty in all its forms which helps the inner man to grow. We have repeatedly emphasized that both in the environment at school and in the materials used, everything should be carefully considered in its artistic bearings, to provide ample room for development for all the phenomena of attention and persistence in work which are the secret keys of self-education. The Montessori teacher should be a cultivator of music, drawing and elocution, responsive to the harmony of things; she must, that is, have sufficient 'good taste' to be able to lay out the school plant and keep it in condition; and sufficient delicacy of manner -- the product of a sensitive nature -- to be alive to all the manifestations of the child spirit."

Taken from The Advanced Montessori Method -- The Montessori Elementary Material, by Maria Montessori. Cambridge, Mass., Robert Bentley, Inc., 1964. Copyright, 1917 by Frederick A. Stokes Company.

There are a number of lovely and simple stories which have been published. The Tall Mother Goose, for example, has a good selection of The Rhymes. It also has the advantage of being easily opened by little hands. It is from classics such as these that the child develops a sense of rhythm and learns the fun of sounds and words which rhyme.

Today's book market is full of ingenious and entertaining stories of the world around us. A child can learn about our world and about himself from such stories. Not only will factual information be gathered, but a love of books and a desire to read will be gained by the child. "Story Time" is truly an exercise in reading readiness.

Appreciation of literature begins with enjoyment of the wonderful children's books which the Centers have to offer. These books should not be used as texts or as rewards for the completion of an unpleasant task! They are to be enjoyed for their bright pictures, their exciting words, their imaginative freshness. From the start the association should always be: books = pleasure.

A Story at Rest Time

CHILDRENS BOOKS

ART

Full of Wonder, Ann Kirk, World, 1959. $2.75 5 plus
The author-artist shows the child how to see beauty in everyday objects and how to capture that beauty in crayon rubbings.

Little Blue and Little Yellow, Leo Lionni, Obolensky, 1959. $2.95 4-6
A lesson in color mixing is taught through an original use of abstract forms and blobs of color.

Books for Beginning Readers

---Stories

Company's Coming For Dinner, Myra Berry Brown Watts, 1959. $1.95 4-6
A charming child in a familiar situation, described and pictured in terms very appealing to young children. Illustrated by Dorothy Marino

Davy's Day, Lois Lenski, Walck, 1943. $1.75 4-6
First-graders will be able to read this simple story of a boy's happy day. By the same author illustrator:
A Dog Came to School; The Little Family and Papa Small

---Fact Books

I Know a Farm, Ethel Collier, Wm. R. Scott, 1960. $3.00
With 177 First-grade words, the author recreates a little girl's happy visit to the farm. Very childlike story and pictures. Illustrated by Honore Guilbeau.

Seeds Are Wonderful, Willene K. Foster and Pearl Queree Melmont. 1960. $1.88
Straight facts about seeds; informative illustrations by Arnold Dobrin. This publisher lists easy books on many subjects including primary Science and Social Studies. 5-8

Houses from the Sea, Alice Goudey, Scribner, 1959. $3.25 5-8
A first book on shell collecting. Beautiful colored illustrations by Adrienne Adams help children to identify many kinds of shells.

What Do You Say, Dear? Sesyle Joslyn, Wm. R. Scott, 1958. $2.75 3-8
This "book of manners for all occasions" teaches social behavior through absurd situations sure to appeal to small fry. Good readers in primary grades will enjoy reading it themselves. Illustrated by Maurice Senkad.

What Do You Do, Dear? Wm. R. Scott, 1961. $2.75 4-8
A sequel to What Do You Say, Dear? and just as funny.

The Cooking Book, Betty Miles, Knopf, 1959. $2.75 3-6
A very first cook book, with the simplest recipes in easy-to-read text and many pictures by Jo Lowrey.

Collection of Modern Stories

Told Under the Blue Umbrella, Macmillan, 1933. $2.75 3-9
Special Edition $1.95
Thirty-seven real or almost real stories of child life.
Illustrated by Marguerite Davis.

A Treasury of Little Golden Books, Ellen Lewis Buell. Golden. 3-8
Forty-eight of the best loved Little Golden Books done up in one large book which should give hours of enjoyment to pre-school, kindergarten and first grade children. Original Illustrations.

Read to Me Storybook, Child Study Association of America, Crowell, 1947. $2.95
Thirty stories and eleven poems, some old, some new, to read aloud. 2-6
Illustrated by Lois Lenski.

Fanciful Stories and Folklore

Peddler's Pack, May Justus, Holt, Rinehart and Winston, 1957. $2.75 all ages
As the peddler's pack contained many items to please children in the Smoky Mountains of Tennessee, so this book is a peddler's pack of play-party games, songs, rhymes and riddles, all folklore of these people. Nonsense rhymes, tongue twisters, signs and predictions have a liveliness that is catching. Illustrated by Jean Tamburine.

Charlott's Web, E. G. White, Harper & Row, 1962. $2.95 $2.79 Lib. Ed. all ages
The captivating story of a near-doomed runt pig, a little girl, a rat, and a spider. Real enchantment! Illustrated by Garth Williams

Holidays to Celebrate

---Birthday

Ask Mr. Bear, Marjorie Flack, Macmillan, 1932. $1.77 Lib. Ed. 4-6
Danny learns from Mr. Bear what the little boy can give his mother for her birthday.

Surprise for Davy, Lois Lenski, Walvk, 1947. $1.95 3-6
A companion to Davy's Day, a tiny book that can be used with all children in the birthday stage. Illustrated by author.

The Birthday Present, Bruno Munari, World, 1959. $2.00 4-6
A father, determined to get home on time for a birthday present for his little boy uses all kinds of conveyances to accomplish his purpose. The gay illustrations by the author make use of many devices (doors which can be opened, box lids which can be lifted) to create suspense with surprise. Followed by The Elephant's Wish and
Jimmy Has Lost His Cap
Done in the same playful manner.

---Christmas

Christmas is a Time of Giving, Joan Walsh Anglund, Harcourt, 1961. $1.75 3-8
A little book especially good for family reading before Christmas.

The Little Fir Tree, Margaret Wise Brown, Crowell, 1954. $2.95 4-8
The story of a little fir tree from seed to Christmas tree -- excellent addition to Christmas stories for young children. Illustrated by Barbara Cooney.

The First Christmas, Bobbie Trent, Harper, 1948. $1.50 3-6
Unexcelled in simplicity of text and picture. Illustrated by Marc Simont.

---Thanksgiving

The Thank-You Book, Francoise, Scribner, 1947. $3.25 3-6
A delightful book to use at Thanksgiving, but equally good at any season. A child says "Thank You" to so many, many things. Beautifully illustrated in the Francoise manner.

---Valentine's Day

The Valentine Party, Pamela Bianco, Lippincott, 1955. $2.75 4-8
This is a delightful story about a little girl who wanted so much to be invited to a Valentine party, and the surprise that greets her at home. Illustrated by author.

---Music

Follow the Music, Lottie C. Coit and Ruth Bampton, Summy-Birchard, 1953. $2.00
A collection of easy musical games and action songs which young 4-7
children enjoy. Rhythmatic and dramatic possibilities are included. Illustrated by Martha Powell Setchell.

Another Dancing Time, Satis N. Coleman, Day, 1954. $2.75 4-7
In this volume Mrs. Coleman has included music that the most modest pianist can play as an accompaniment to the earliest "play dancing" done by small children. The musical pieces are concerned with birds, frogs, balls, merry-go-rounds, farmers, woodcutters, etc. Rhythmic and dramatic possibilities are included. Illustrated by Vana Earle.

Songs for the Nursery School. Laura Pendleton MacCarteney, Willis. $3.00 1937
Songs about everyday experiences. Tone games, finger plays, songs about animals, transportation, water and seasons. Rhythmic and dramatic suggestions included. Illustrated by Peter Perrine.

Music for Active Children. Compiled by Elise Braun, Frederick Ungar Pub. Comp. $5.50
Pieces are divided into different rhythms corresponding to various all ages
movements which children are able to do (Marches, Runs, Skips, Trots, etc.) and are presented in the order in which the child develops his muscular coordination.

Music for Early Childhood, a New Music Horizons Series, Special authors, $6.00
Mary Jarman Nelson and Gladys Tipton. Silver Burdett Co., 1952 3-7
Includes: Moving with Music, Playing Instruments, Listening to Music, Special Occasions, Helps for the Teacher, etc.
Illustrated by Lillian Chestney and Ellen Simon

Picture Storybooks

A Friend is Someone Who Likes You, Joan Walsh Anglund, Harcourt, 1958. $1.75
A tiny book with charming illustrations, this tells how to recognize a friend and how to be one.

Love is a Special Way of Feeling, Joan Walsh Anglund, Harcourt, 1960. $1.75
A warm and tender book telling children that love comes quietly and stays inside your heart for the rest of your life. Delightfully illustrated. 4-6

Madeline in London, Ludwig Bemelmans, Viking, 1961. $3.50 5-10
Madeline and her fellow pupils from her Paris boarding school visit London and the plot and pictures are among Bemelmans' best.

The Country Noisy Book, Margaret Wise Brown, Harper & Row, 1940. $2.50 3-6
A book of sounds heard by little dog Muffin. In the same spirit The City Noisy Book, The Quiet Noisy Book, The Noisy Book, and The Summer Noisy Book

The Important Book, Margaret Wise Brown. Harper & Row, 1949. $3.00 3-6
$2.84 Lib. Ed. This book tells the important things about ten different objects: rain, snow, grass, etc. Illustrated by Leonard Weisgard.

Grandfather and I, Helen Buckley, Lathrop, 1959. $2.75 4-7
A little boy and his grandfather seem to be the only two people in the world who are not in a hurry. They walk . . . and stop . . . and look . . . and enjoy each minute of their time together.

A. B. C. Bunny, Wanda Gag, Coward, 1933. $3.50 5-7
An alphabet book which sings itself into the child's memory. Artistically and otherwise one of the best. Illustrated by the author.

A Hole is To Dig, Ruth Krauss, Harper & Row, 1952. $1.95 $2.19 Lib. Ed. 3-7
A first book of first definitions -- not a story. The language and idiom of four and five year olds has been unerringly captured. Illustrated by Maurice Sendak.

A Pair of Red Clogs, Masako Matsuno, World, 1960. $3.00 5-8
Little Mako makes herself unhappy when she won't tell that she has cracked her new clogs. Beautifully illustrated by Kazue Mizamura.

Make Way for Ducklings, Robert McCloskey, Viking, 1941. $3.50 4-9
The ridiculous procession of Mrs. Mallard and her 8 ducklings waddling sedately through the crowded city streets. Illustrated by author.

A B C, Bruno Munari, World, 1960. $3.50 3-5
A handsome alphabet book with large uncomplicated illustrations

Caps for Sale, Esphyer Slobodkina, Wm. R. Scott, 1947. 4-6
A peddler runs into some real monkey business when some monkeys steal his caps. Good for reading aloud.

Umbrella, Taro Yashima, Viking, 1958. $2.50 4-7
A Japanese artist has done a brilliantly imaginative picture book about a little girl who longs for rain so that she may wear her new red rubber boots and carry her new umbrella.

No Roses for Harry, Gene Zion, Harper & Row, 1958. $2.75 $2.73 Lib. Ed.
Harry, hero of the author's Harry, The Dirty Dog, gets an unwanted sweater and disposes of it in a most ingenious way. Good fun in an easy story with surprise ending. Illustrated by Margaret B. Graham.

Over and Over, Charlotte Zolotow, Harper & Row, 1957, $2.75. $2.73 Lib. Ed.
Unusually lovely pictures by Garth Williams, show a little girl so young that she only "half remembers" days and events -- snowfall, Christmas, Valentine's Day, Easter, vacation at the seashore, Halloween, Thanksgiving and birthday. The way the little girl's mother prepares her for what comes next will help small listeners share the secure anticipation of the girl in the story. 4-6

Poetry for all Tastes and Moods

---Mother Goose

The Tall Book of Mother Goose, Feodor Rojankovsky, Illustrator, Harper & Row, $1.95. Not an orthodox interpretation of Mother Goose, it leans to the modern. Pictures have great dash and beauty in color and design. 3-5

---Individual Poets

Nibble, Nibble: Poems for Children, Margaret Wise Brown, Wm. T. Scott, 1959. $3.75. Poems about the little bugs and animals who live in the wide green world of the meadow. The beautiful illustrations, all in green, are among Leonard Weisgard's best. 5-8

Whispers and Other Poems, Myra Cohn Livingston, Harcourt, 1957. $2.25 5-9
This small book of poems gives a child's-eye view of such matters as riding on the train, going to the zoo, pretending and dressing up. The poems sound remarkably like children talking about things that interest them most. Tiny pen and ink sketches by Jacqueline Chwast are as gay as the verses.

---Collections

Birthday Candles Burning Bright, Sara and John Brewton, Macmillan, 1960. 4 +
Birthday poems for children of all ages. Illustrated by Vera Bock. $3.50

Poems to Read to the Very Young, Joseph Frank, Random, 1961. $1.00 3-7
Charming illustration by Dagmar Wilson for a well chosen short collection of poems

Realistic Stories

Two is a Team, Jerrold and Lorraine Beim, Harcourt, 1945. $2.75 4-8
A delightful story of Ted, a little Negro boy, and Paul, a little white boy, who played together everyday after school. Illustrated by Ernest Crichlow.

Religion

The Christ Child, Doubleday, 1931. $3.00 4-10
Maud and Miska Petersham's masterpiece of illustrating the childhood of Jesus as recorded in the Gospels of Matthew and Luke.

Prayer for a Child, Rachel Field, Macmillan, rev. ed., 1957. $2.75 Lib Ed. 4-6
Gentle verses and appealing pictures express the child's gratitude for his parents' love, his name and all the good things of this world.

Book About God, Florence M. Fitch, Lothrop, 1953. $2.75 4-8
Written with exquisite simplicity. Printed in large size type. Beguiling illustrations by Leonard Weisgard.

Animals of the Bible, Dorothy P. Lathrop, Lippincott, 1937. $3.50 4-9
An exquisite picture book which might well serve as an introduction to the Bible stories. Text chosen by Helen D. Fish from King James Version.

Science

---General

The Hole in the Tree, Jean George, Dutton, 1957. $2.75 5-8
Many creatures use the hole in the tree as it grows in size from a tiny place to a large one.

Where Animals Live, Terry Shannon, Whitman, 1958. $2.75 7-10
Animals that live off the ground, on the ground, under the ground and in the water are described. Every animal mentioned is illustrated, some in color. Simple text.

---Shore and Ocean Life

The True Book of Pebbles and Shells, Illa Podendorf, Childrens, 1954. $2.00
For primary readers, a very attractive book printed in large, clear manuscript. Illustrated by Mary Gehr. 5-8

---Electricity and Magnetism

Mickey's Magnet, Franklin Branley and Eleanor K. Vaughan, Crowell, 1956. 4-8
$2.50. Discovering some of the first-things-to-know about magnets by experimenting and observing. Illustrated by Crockett Johnson.

---Experiment Books

Now I Know, Julius Schwartz, Whittlesey, 1955. $2.75 5-10
To help young children discover the explanation of sound, sight, and feelings.

---Mathematics

Let's Find Out What's Big and What's Small, Charles and Martha Shapp, 3-8
Watts, 1959. $1.95. An introduction for measurement in non-numerical terms using a limited vocabulary for the very young. Illustrated by Vana Earle.

To introduce poetry, let us use some of the many thousands of short poems found in all languages, from the Japanese haiku through works by poets from the Chinese Tu Fu to the German Goethe to our own Walt Whitman. We should use small books, child-sized books, not the backbreaking double-column anthologies which imprison literature in our schools. No, small books of a dozen pages each, softbound in bright covers with blank pages left for the children to make their own drawings or write their own poems. Small books that can be carried in the pocket and brought home, books that perhaps the parents can read. Poems that can be related to the environment of the children, poems about horses and clouds, flowers, sunset and night. There are many, many of them!

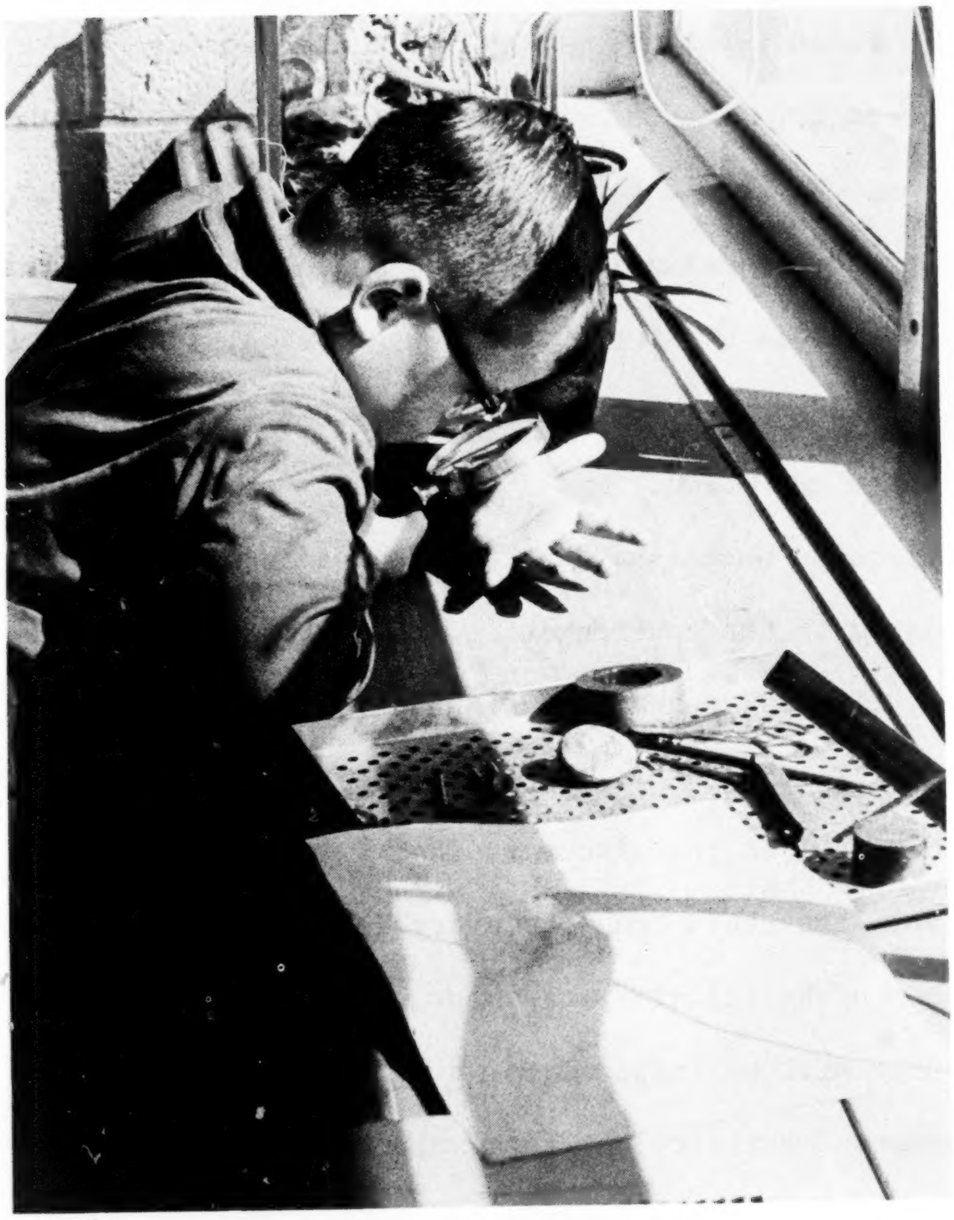
Not all children will like all the poems. Nor is that necessary. But how beautiful is the discovery that a poet has seen--and has found language for--the trees one sees every day or the feeling of loneliness one has when night falls! We see our world then with doubled vision. Some children will be inspired to write their own poems; the aim is not for professional artistry but for exploration of one's own emotions and for development of fresh, precise language. We must avoid using the old chestnut poems and strive for freshness and immediacy in our choices.

A sample poem (by Su Tung P'o, translated by Kenneth Rexroth)[5]

> I fish for minnows in the lake.
> Just born, they have no fear of man.
> And those who have learned,
> Never come back to warn them.

---

[5] One Hundred Poems from the Japanese, translated by Kenneth Rexroth (New York: New Directions, 1964).



THE YOUNG EXPLORER

"The instruments of artificial senses are to be brought in requisition. The handling of the compass, the magnifying glass and the most philosophical of them, the microscope must be made familiar to all children who shall learn how to see nature through itself instead of the 26 letters of the alphabet, and shall cease to learn by rote, by trust, by faith instead of by knowing."

Seguin, Eduard, Idiocy, (op. cit.)

BEGINNING SCIENCE FOR CHILDREN

A small child is not, consciously, aware of natural phenomena as an area of interest and study any different from any other experience he is encountering for the first time. However, the sensorially-trained child is storing up experience and knowledge which will be of great value to him in future scientific observation.

Very early in his sensorial experience, he has learned to evaluate color, size, weight, shape. Ice melts into water and can be refrozen into ice again. Water can be made to boil by the heat of fire, evaporate into steam and reconstitute into water again by condensation on a chilled sheet of glass held over the kettle. Seeds are planted, sprout, grow, flower, fruit and reproduce their seeds in the fruit. Rice and water pour in a predictable direction because of the pull of gravity. All very commonplace to an adult, but uniquely exciting to the young child.

But, again, in the sciences the child does not learn from seeing alone -- the hand is the child's teacher. He must have an opportunity to experiment and handle and perform the simplest science expdriments suitable to his age and intelligence. Magnets, magnifying glasses and microscopes are fascinating. Every basic scientific experience known at this early age may develop into a continuing interest in things scientific, whether as a working scientist or the boy who is washing the test tubes.

An acquarium is a delightful addition to the classroom. Children should be encouraged to care for plants. Simple plants which do not require too much care are the best. A sweet potato in a pretty glass vase so that the root system can be observed is a good beginning. And if it is possible for the children to have a small garden plot of their very own in which to plant and watch the development of flowers and the easier-grown vegetables -- lettuce, tomatoes, beans -- it will be a never-ending source of edification and delight to them.

It is suggested that as part of the children's experience of natural science a pet be a fixture in the classroom. Vegetarian rather than carnivorous animals are preferred in a class for younger children: a bird, turtle, rabbit, hamster, guinea pig, etc. The care and responsibility for pets kept in a classroom should be shared by the teacher. Before the teacher leaves the classroom for the day, she should be sure that everything is done that is necessary for the comfort of the animal.

The practical life exercises plus the education for order are of great importance in the enjoyment and learning about animals. In Darwin's Diary, "The Voyage of the Beagle," he writes that he was assigned a very small cabin and he was collecting so many specimens that he, for the first time in his life, had to keep order. Keeping order and putting everything in place gave him such a foundation for his later research that he was able to do all his classifying and scientific work.

From studying and observing animals, the child also will begin to get an idea of man's adaptation to his environment and learn many facts about health which also apply in many instances to human beings -- cleanliness and eating on time, need for water, for light, etc.

One should always see to it that the animal is kept alive; but, if the pet should become sick, it should be removed before the children observe it dead. Loss through death is an unfathomable mystery to the very young child. The observation of death in animals can be postponed until a later date.

Presenting science and scientific facts in a simple and true way will help the children to develop a love for this subject.

A SCIENCE CALENDAR

September

The month of September is a good time to explore nature. The out-of-doors should be used a great deal during this season. Personal touch with objects of nature and an understanding of how they live in their natural environment.

1. Look for spider webs. Find the different types: round, square, funnel shaped.

2. Look for the activities of animals, such as squirrels finding nuts and storing them; caterpillars and their cocoons. Find the chrysalis of butterflies.

3. Observe the changing colors of leaves. Bring them back to school and separate them by color and shape. Make a tree in the classroom by pasting the leaves on a pre-drawn tree trunk. Develop games using the leaves, such as placing various types on the bulletin board and having the children find mates for them.

4. Using toothpicks, flower buds, flowers and small vegetables, let the children experiment with making people or objects.

5. Have treasure hunts through a field or woods, seeking the largest and smallest leaves, seeds . . .

6. After a walk in the park or woods, have the children describe things they saw for other children to guess the name of the object. This activity could serve two or more classrooms in a group situation.

7. Have the children cooperate in transplanting, potting and caring for outdoor plants in the classroom over the winter. Where possible, plant the plants in narrow glass containers so that the children may observe root formation and development.

8. Locate deserted animal and bird's nests. See what materials are in them and how they were constructed.

9. Look for the swellings on leaves and the stems of plants (galls) and open them to see where the tiny insects used to live.

October

1. Collect seeds and place them in boxes or mount them on charts. Older children may make booklets of them.

2. Wax leaves and mount them for display.

3. Make a large wall chart, with squares of different colors across the top. Locate and mount leaves of corresponding colors below.

4. Spatter paint over paper on which the children have arranged a design of seeds, leaves, bark, stones or other field objects.

5. Plant narcissus at the end of the month in order to be ready for Christmas.

6. Fill a flower pot with clay, another with sand, and another with garden soil, then raise seeds in each pot.

7. Make patterns on paper with pumpkin seeds, melon seeds and other seeds. Spatter paint when permanence of pattern is desired.

8. Make and cut out paper fruit and hang them on a real tree branch.

9. Prepare a pumpkin for Halloween.

November

1. Find out what people and animals do to prepare for winter.

2. Collect pictures and make large posters of how animals get ready for winter: some store food, some go to sleep; some change color.

3. Begin a "What is it?" shelf or table. Encourage the children to bring in nature objects and place them on the table. The exercise provides valuable practice in using all the senses to find out about the world around us. Table should contain a magnifying glass or two, some books with large nature pictures, boxes for insects and small objects . . .

4. Collect rocks, place them in plastic boxes by size or colors. Try painting pictures on large ones. Decorate smaller ones for paper weights.

5. Make a bird feeding station and establish it outside a child height window. Encourage the children to bring or find food and place it in the station.

December

1. Make a Christmas tree for the birds and hang food from it.
2. Observe the birds who come to the station and the Christmas tree and learn to identify them and note their different eating habits.
3. Place a thermometer in hot water, then in cold water and watch it rise and fall.
4. Place a coke bottle full of water outside on a day with temperature below freezing and watch the bottle crack as the water takes up more and more space turning into ice.
5. Decorate pine cones with paint and ribbon to be used as Christmas balls.
6. Use evergreen leaves for decorating paper before spatter painting.

January and February

1. Place a glass of water in the room near the radiator. Mark the water line on the glass and observe it from day to day noting the evaporation.
2. Rub dissimilar things together and notice the heating effect of friction (a saw after cutting wood; sled runners after a slide . . .)
3. Collect pictures of homes and clothing of people in all climates. Discuss the effects of weather on how people live. Secure samples of the different fabrics used for clothing in different climates, and compare them as to softness, thickness and roughness.
4. Look for animals' tracks in the snow and try to follow them and locate where the animal lives.
5. Experiment in the snow. See what kinds of marks your hands make, your feet. Have the children walk, jump and run and distinguish among their tracks in the snow.
6. Keep a daily weather chart. Use a weather clock, weather boy (flannelboard), a Ribbon Thermometer.

March and April

1. Make windmills and fly them outside. Make kites and fly them. Investigate the effect of the tail on the kite and the modifications of the conventional kite such as the box kite and the more recent "winged thing."
2. Rear some tadpoles from eggs. Observe how they eat; note the appearance of legs and the absorption of the tail; watch the change in style of swimming.

March and April (cont'd.)

3. Anticipate the arrival of Spring. Observe the rebirth of the plant world and the activity of the animals.

4. Start some plants indoors for transplanting outdoors.

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A PRIMARY SCIENCE LIBRARY

ANIMALS

Bradbury, Bianca	*Muggins*
Brown, Margaret Wise	*The Seas*
	The Runaway Bunny
Dennis, Wesley	*Flip*
Ets, Marie Hall	*Mr. Penny*
Flack, Marjorie	*Lucky Little Lena*
	Angus Lost
	William and His Kitten
	Angus and the Ducks
	Angus and the Cat
Gag, Wanda	*Millions of Cats*
	Nothing at All
Gipson, Morrell	*Mr. Bear Squash-You-All-Flat*
Klem,	*Mike and His Neighbors*
Lawson, Robert	*A Tale of Tails*
Lowrey, Janet Sebring	*The Pokey Little Puppy*
Woodcock, Louise P.	*The Kittens Who Hid from Their Mother*
(see Farm)	*The Little Woman Wanted Noise*
(see Circus)	*Little Peewee*
Zion, Gene	*Harry the Dirty Dog*

BABIES

Eng, Rita	When You Were A Baby
Flack, Marjorie	New Pet
Kraus, Robert	The Littlest Rabbit
Shane, Ruth and Harold	The New Baby

BIRDS

Allen, Gertrude E.	Everyday Birds
Bradbury, Bianca	Amos Learns To Talk
Flack, Marjorie	The Story About Ping
Friskey, Margaret John, Mary Lee	Seven Diving Ducks
La Fleur, Marjorie	Little Duckling Tries His Voice
McCloskey, Robert	Make Way For Ducklings
Sewell, Helen	Birthdays for Robin

FISH

Smalley, Janet	Do You Know About Fishers

FOOD (see Gardens)

Black, Irma S.	The Little Gardeners
	This Is the Bread That Betsy Ate

FROGS

Flack, Marjorie	Tim Tadpole and the Great Bullfrog

FARM

Baruch, Dorothy	*A Visit to the Farm*
Bonino, Louise	*The Cozy Little Farm*
Dalgliesh, Alice	*The Little Wooden Farmer*
Mitchell, Lucy S.	*A Year on the Farm*
Teal, Val	*The Little Woman Wanted Noise*
Tensen, Ruth	*Come to the Farm*
(see Weather)	*White Snow Bright Snow*

GARDENS

Black, Irma S.	*The Little Gardeners*
Ets, Marie Hall	*Mr. Penny*
Webber, Irma E.	*Up Above and Down Below*

INSECTS

Baruch, Dorothy	*In the Grass*

SEASONS

Adelson, Leone	*The Blowaway Hat*
Brown, Margaret Wise	*Little Island*
Mitchell, Lucy S.	*A Year on the Farm*
Rowley, Frances	*Lost in the Leaves*

VEGETABLES

Webber, Irma E.	*Up Above and Down Below*

HOW TO PREPARE AN ENVIRONMENT FOR PAINTING

Art is not to be considered a "special" skill, but rather, it is a normal activity of every child. All children find it necessary to express their feelings and it is essential that they have the opportunity to do so. Running, jumping and dancing express physical experiences. Social, mental and emotional experiences can be expressed through painting.

Physical equipment:

There should be a table low enough for the child to reach and upon which he can see the entire surface of the paper.

Bookshelves should be close at hand, low enough to be reached easily, at least 18" deep for the papers, and with room on the shelves for the paints.

A tea cart type table may be used.

A low deep drawer (for papers 18 x 24) is suitable.

A linoleum rug should be under the area.

Easels make for easier reaching of all ends of the paper but paints are harder to control in this position as there are drippings, much to the annoyance of the artist. A backing of masonite propped against a chair back can make a satisfactory painting surface.

Children often prefer to use the floor for a work table.

Paints and brushes:

Poster paint is the best for the young child since it is easy to manipulate and is opaque. The colors can be changed by painting one color over the other without having to wait for the first color to dry.

Although powdered paint is cheaper, it sours quickly and has to be changed often.

Keep paints covered to prevent their drying out.

Red, blue, yellow, white and black are sufficient. By mixing two or more of these you can obtain almost any color you desire. This gives the child a chance to experiment and "discover."

Small jars -- like baby food jars -- are easily handled. Use vaseline around the rim to make it easier to unscrew the tops for re-use of a color.

Plastic furniture coasters also make good paint containers.

A baking sheet or gallery type tray is a suitable container for the art supplies. A handy tray is available commercially from Childcraft Inc.

A sponge and bowl are standard equipment for holding the water during the painting and cleaning up afterward.

Brushes:

Long-handled brushes with flat short bristles are used; 3/4", 1/2" and 1/4" are enough for the beginning artists.

The child should be shown how to wash the brushes and how to store them so that they are not resting on the bristle end.

Techniques should not be taught until the child is ready and asks for them.

The child first is shown how to avoid dripping paints by wiping the brush on the lid.

A clean brush should be used for each color to avoid a mess.

Paper:

White drawing paper is the best for painting but it is costly.

Size 18 x 24 is the easiest to handle.

Newsprint is not recommended. It is too flimsy and very discouraging to the child when the paper tears.

Manila paper is satisfactory.

The financial and want ad sections of the newspapers can be used for most interesting artistic effects.

Reams of paper, 500 sheets at a time, can be bought.

A place where the child can store his picture to dry is assigned.

Smocks and aprons can be borrowed from the Practical Life Exercise corner.

Desirable attitudes toward art will not be developed at once but we must start with our programs for training teachers and consider the possibility of using practicing artists as teachers and resource people, rather than depending on elementary school educators in this field.

We have all seen children's paintings and many of us have come to appreciate the beauty to be found in these brightly-colored pictures of the world as the child sees it. But we must not take for granted that everyone can see this beauty. Before we can reach the children, we must reach the teachers. It is not enough for a teacher to look at a child's painting and say, "Yes, that is lovely," before turning to another task, or to hang every picture on the wall for a day, then take it down and return it to the child.

Children are skilled in reading non-verbal communication and they understand that their work is not valued by the teacher or by their parents, and so they distrust their own creations and finally the impulse that drives them to paint, so that they become crippled and do not even recognize the beauty of paintings done by others.

©Fred Csasznik 1963

THE RIGHT TO BE DIFFERENT

Pictorial materials and folk music help to create a bridge between the child's native culture and his present environment. They can give him a feeling of belonging and establish a better rapport between the home and the school.

MONTESSORI AND MUSIC EDUCATION

The language of sounds has developed throughout the centuries in many ways comparable to the development of the spoken language. As the child has in him the power of mastering speech, so also can he master music.

Rather than to teach music we should create a musical environment. This can be done by:

(1) Children participate in singing hymns, songs, spirituals, etc.

(2) Bells of varying tones can be used to signify the beginning or end of activities, e.g., lunch, play period, etc.

(3) Tiny music boxes could be given to the children.

(4) Musical games should be played.

(5) The music of Bach, Beethoven, Mozart, Gershwin, Copeland and others could be played while the children work or simply listen. The names of the composers should be given so that the children become familiar with them.

"The Singing Alphabet" *

The alphabet is one of the first things we learn in school. Despite this fact, there are a number of adults who still struggle with the sequence of letters. Waste of manpower hours is a matter of record not only in industry but also in government because of this inadequacy.

Marie Montessori recognized that the very young child learns effortlessly and retains forever what he learns in his very early years. Young children enjoy the repetition of words; they also have a special natural feeling for rhythm. Learning through a combination of these two naturals makes them retain (and easily recall) many things.

With this in mind, we have experimented and have successfully used this particular song and record not only in teaching the young pre-school child, but also, in special classes, the retarded child who thus acquires a sorely needed medium to function in our society.

The great advantage of this particular alphabet song, as compared to some of the others, is that it is based on a folk tune and is something that can be carried on throughout adulthood without evoking a childish designation of nursery songs.

The record is obtainable at the Library of Congress.

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* Library of Congress Recording No. AFS L12 in the Archive of Folk Song.

Mother may I go out to swim? Yes, my darling daughter.
Hang your clothes on a hickory limb,
  But don't go near the water.
A-B-C-D-E-F-G-H-I-J-K-L-M-
N-O-P-Q-R-S-T - and that's the way to spell 'em!
Then comes U and then comes V,
Let the chorus ring 'em.
Double U (W) - X and Y and Z
And that's the way to sing 'em!

Rhythm Instruments

Children love to make noise, and at times doing so is valuable. Percussion provides an outlet for release of tension, and can be controlled and directed toward their best interests and development. Below I have listed a few ways to make instruments which can be made by either the teacher alone or with the children. The expense is very little and the instruments which I have made and found most useful to the children are as follows:

DRUMS

Indian Water Drum - Coffee cans filled about one-quarter full of water. Circular rubber head from discarded inner tube should be bound tightly over drum frame with heavy shellacked string. Drum then decorated with colorful yarn.

Wastepaper Basket Drum - Painted rubber sheet tied over painted wastepaper can. One rubber sheet will make four drums.

Large Drum - Nail keg or barrel covered with inner tube and painted in colorful designs.

Oatmeal Boxes - Shellacked and finger painted, ends covered with rubber sheet held in place with thumb tacks enameled with nail lacquer.

RATTLES, SHAKERS, MARACAS

Most of these consist of containers filled with a material that will produce sound when manipulated.

Paper Cups and Bell - Two cups held together with colored scotch tape. Bell inside, color and paint cup.

Cookie Cutters - Two cookie cutters joined with colored scotch tape. Split peas used for sound.

Beer Can - Painted and taped over openings. Hole made for dowelling handle. Either split peas may be inserted or small rivets can be used for sound.

Tennis Ball - A small hole cut, pebbles, stones, or buckshot inserted. A painted stick put in hole for handle.

STEREOGNOSTIC GAME

PURPOSE:

To develop the sense, related to the tactile, of memory and recognition of shape or form.

It is well known that children learn through games. A game which helps the development of the stereognostic sense can be played in various ways. Get a box of different materials -- two of each material to be in the box, like different pieces of paper, sandpaper, cardboard, crepe paper, etc. Let the child see and feel the difference. Teach the child the names of the different samples; then blindfold him and let him take out a piece of this material and name it by its feel. Find another one of the same texture. A similar game can be played with a box of various shapes -- pick out blocks, but there should be two of the same shape. Let the child feel and find the same block.

A game can be played by putting different objects into a bag which can be pulled together by a string, leaving enough room for the child's hand. Before he pulls out the object, he will have to name it.

For insecure and small children, it is a good idea to let them see the objects before they are put in the bag. About 10 objects will be enough -- these can be little toys or little odds and ends that one finds around the school or home. This bag can be used later in studying science, e.g., magnets, discs, pine cones, shells -- help the child to identify the objects just by touch.

At Christmas time, the children enjoy filling a stocking with toys. Not only does it help the child to identify by feel, but it also encourages a timid child to talk and enlarge his vocabulary.

Similar games can be played by putting various little sticks into a bag and asking the children to bring out the largest, the smallest, the thickest, etc. The children are learning to distinguish size by feeling and learning the appropriate name. This adds to their concept of size and to their vocabulary: give me the LARGEST, give me the SMALLEST, etc.

MATERIAL:

A box, carton or bag with an opening just large enough for a child to insert his hand containing a number of dissimilar objects, always in pairs and in exactly the same size:

2 spools
2 keys
2 little bottles
2 buttons
2 little toy animals
etc.

In playing the game, the child reaches into the bag or box, selects one object, describes it, pulls it out, identifies it and then finds the mate to it by feel alone.

It can also help the child in classifying if the container is filled with natural objects: pine cones, acorns, shells, small stones and the like.

THE SILENCE GAME

The silence game plays an important part in Montessori education. It prepares the child to be a good listener which is very important both in his later life and in entering school in order to make a success in reading. We are so accustomed now to have radios or televisions going all day long, that even in riding a car we always turn the radio on -- we are very rarely without any stimulus of noise.

Sitting down with the child and playing the silence game is just asking the child to be completely quiet -- not only not talking, but trying not to move his body. Then try to listen to the quiet, and the child makes the discovery that there isn't absolute quiet, but there are certain noises heard -- like the dripping of a faucet or the heat going, or the ticking of a clock. This gives him another awareness of his environment. He also enjoys the silence game by closing his eyes and just listening very quietly.

In a Montessori school, this silence is instigated through the ringing of a bell. The children love to stop everything and be completely quiet. This is an excellent way of training their attention. After they have mastered the step of just sitting quietly and listening, one can also ask them to lift the chair they are sitting on and to put it down very quietly without making noise. All these exercises are wonderful ways of training his coordination. In many cases the children learn, too, that silence is not a punitive measure, because very often children get that idea when adults in the home are in discord and fall into silence.

Later on, a child can perform all kinds of little exercises without making any noise, and he enjoys this very much. For example, stepping on the chair and down without making any noise; stepping up on the chair with a little bell in his hands and trying not to make the bell ring and break the silence. As the child gets older, these games can be progressively more difficult and also require longer periods of concentration.

PURPOSE:

1. Spiritual pleasure of silence.
2. Increasing powers of self-control and development of ability to listen.
3. Preparation for moving and working quietly.
4. Development of social sense (one disturber takes away the charm).
5. Aid to development of language, music and orderly group behavior.

PRESENTATION:

Since control of all movements are necessary for silence, the teacher tells the children what she is going to do and show them how quiet she can be, calling attention, if appropriate, to the fact that her feet are still, her body, her head, her arms, even her breathing.

EXERCISE:

Do not move. Find comfortable, balanced position on chair or floor. Darken room, or close eyes, or cover eyes with hands.

ON THE RIGHT
FOR GOOD NUTRITION
CHURCH

Give Us This Day Our Daily Bread

In her book *Pedagogical Anthropology*, Montessori has said:[6]

> Accordingly, we must to-day regard the serving of food in the schools as a necessity of the first order; but it is well, in introducing it into the schools, to surround it with that halo of gladness and of high moral significance that ought to accompany all manifestations of life. The *hymn to bread*, which is a human creation and a means of preserving *the substance* of the human body, ought to accompany the meals of our new generations of children. The child *develops* because the substance of his body passes away, and the *meals that* he eats symbolise all this: furthermore, they teach him to think of the vast labour accomplished by men who, unknown as individuals, cultivate the earth, reap the grain, grind the flour, and *provide* for all men and for all children. Where they are and who *they are*, we do not know; the bread bears neither their name nor their picture. Like an impersonal entity, like a god, humanity provides for all the needs of humanity: and this god is labour. If the child is destined some day to become himself a labourer, who produces and casts his products to humanity without knowing who is to receive his contribution toward providing for humanity, it is well

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[6] Maria Montessori, *Pedagogical Anthropology* (New York: Stokes & Co., 1913).

that as he lifts his food to his lips he should realise that he is contracting a debt toward society at large, and that he must give because he takes; he must "forgive debts as his have been forgiven"; and since life is gladness let him send forth a salutation to the universal producing power: "Our Father, give us our daily bread!"

The Providence of human labour rules over our entire life; it gives us everything that is necessary. The God of the Universe, in whose train come cataclysms, is not more terrible than the god, Humanity, that can give us War and Famine. While we give bread to the child, let us remember that man does not live by bread alone: because bread is only the material of his fleeting substance.

Preparing the Environment
Setting a model from which the children can learn

TRIPS

For the child whose environmental experience may be limited to his own home, yard or street, a journey afield can be an instructive, memorable and invaluable experience.

In many cases the trip planning will result for an expressed interest of the children. Some possibilities are:

Grocery Store
Airport
Chicken or duck hatchery
Zoo
Bakery
Five and Ten
Farm
Docks
Lumber Yard
Beach
Library
Dairy
Drug Store
Greenhouse
Train
Museum
Laundry
Fire Station
Apple Orchard
Fisheries

A thoroughly formulated plan of procedure is the first essential of successful school trips.

I. Organization and Procedure.

1. Make a preliminary survey. The teacher should make the trip first.

   a. Determine the length of time required for the trip and plan the exact route to be followed.

   b. Discuss the trip with the person in charge of the place being visited. Secure advice as to the best time to arrive and the persons from whom help and guidance can be obtained at the destination.

   c. Explain to the persons involved at the place being visited, the goals of the trip, and the needs of the children.

2. Make all necessary arrangements with

   a. school authorities;
   b. parents of all children;
   c. assistants to help with the children on the trip;
   d. the management and employees of the place to be visited;
   e. the transportation authority.

3. Determine the cost of the trip well in advance and prepare the class and the school authorities.

4. Develop in each child a need and desire for the trip, and encourage each child to make the trip with a definite purpose in mind, or in search of definite information or enjoyment.

II. The Trip.

The teacher is a constant articulate guide.

1. Enroute.

    a. Encourage the children to observe and remember items of interest along the way to and from.

    b. Stress the meticulous observation of all safety rules.

    c. Cultivate an interest in quiet observation and discussion and courtesy to other passengers on the conveyance.

2. At the destination.

    a. A definite lesson.

    b. Make sure each child observes what he came to observe.

3. On the return.

    a. Carefully check all members of the group.

    b. Encourage discussion of the experience, and exchange of ideas and observations among the children.

III. Followup. By the teacher.

1. With the children.

    Encourage the children to discuss the trip and relate the observations made with all current activities in the classroom.

2. For the record.

    a. File lesson plans relating to the trip for permanent record.

    b. Make a full report for the central file, noting items which might assist other teachers in making the same trip.

IV. General Precautions.

1. Do not spend too much time traveling to the trip's destination. The group must be fresh and eager to discover.
2. Do not crowd too many activities into a single trip. Each trip should have a single central objective.
3. Each member of the group must be able to participate actively and not merely be passive listeners.
4. Keep the entire program simple.

MONTESSORI EDUCATIONAL TOYS

In addition to the many readily available materials to be presented to or prepared for the children in a sensorial-directed classroom, the Montessori Materials Center at 175 Fifth Avenue, New York, N. Y. 10010, has prepared a list of educational toys which are Montessori oriented and are available through the Center. (Their list notes that from time to time there may be additions or deletions.) Their list includes the following:

RATTLE 2.49

Designed in Denmark, affords excellent opportunity for prehensile grasp, eye-hand coordination, and audial perception

YARN BALL 2.98

Made by Montessorians for development of large muscles of shoulder and arm as well as the muscles of the hand and fingers. Bright red, blue and yellow yarns as an introduction to color discrimination

SIX PEG BLOCK 3.95

Grasp of brightly colored cylinders provides child opportunity for matching the red, blue and yellow pegs and placing them into the block which is pre-drilled for control

POSTING BOX 3.18

This bright red posting box from England has removable base which collects the various shapes as they are dropped into the proper hole on top

POSTING BOX 4.19

Beautifully designed in England, this box has the added feature of a knobbed top for exercise of the opposing fingers of cortical opposition. The various geometric shapes fall into a removable tray in the base of the box

GEOMETRIC INSET BOARD 2.20

Knobbed geometric figures fit into the matching cut-out. A really good first puzzle it affords good practice in cortical opposition and eye-hand coordination

PLASTIC SCREW SET 2.16

Nuts and bolt give the child large opportunity for wrist and finger manipulation

WOOD SCREW SET 1.70

A find which children find most pleasurable affords opportunity for hand manipulation as well as the exercise of matching the brightly colored screws

Extra screws available .12

Extra screw drivers available .28

BUSY BOARD 2.75

Six different fasteners and screws and bolts and wing nuts offer the child opportunities in eye-hand coordination as well as good practice in wrist and finger manipulation

BEAD STRINGING 1.32

Attractive selection of half-inch beads in square, cylinder and sphere shapes in hinged plastic box offers good opportunity for child to exercise hand muscles as well as giving excellent eye-hand practice

PICTURE LOTTO 3.52

Clear, isolated, brightly colored pictures on square wooden boards which are matched onto a control board of nine pictures. There are four control boards and 36 pictures to be matched making for good practice in pre-reading

AT HOME PICTURE PUZZLE 3.06

Picture of living room with lift out, knobbed objects which are removed and replaced using the cortically opposed thumb and finger

AT THE POND PICTURE PUZZLE 3.06

Same as above except that the picture is of a pond with removable trees and boats

BEACH PICTURE TRAY 4.94

Objects cut out and fitted with knobs. Colors are painted on thick plywood which is washable

ZOO PICTURE TRAY 4.94

Same as above with zoo animals which are cut out

FARM PICTURE TRAY 4.94

Same as above with farm animals which are cut out

STREET PICTURE TRAY 4.94

Same as above with bus, truck, and people which are cut out

BUILDING SQUARES 4.24

Provides manipulative activity for children who, by comparing and grading the shapes and sizes are able to build three dimensional boxes. The bases are grooved providing built in control of error. Gives good introduction to concept of volume

BUILDING TRIANGLES 4.24

Same as above

BUILDING RECTANGLES 4.24

Same as above

SEWING CARDS 1.75

Series of ten color coded cards simple of design and sewing strings. Excellent eye-hand exercise

JUNIOR MEMORY 1.75

May be used as designed, as a memory game, for older children, but it is ideal as a first picture matching exercise because of the simple design of the pictures

EARLY WORD PICTURE AND WORD MATCHING CARDS 8.00

240 cards distributed in twelve categories with labels to match

EVERY DAY PICTURES 15.00

Boxes containing cards and detached labels and booklets containing the same pictures with attached labels for matching and reading. The cards are very well designed and provide excellent means for the teaching of reading both at home and in the classroom

EARLY WORD PICTURE DICTIONARY 1.00

A small child's book containing the same pictures as in the Early Word Picture and Word Matching Cards mentioned above with their definitions. The two may be used together for a matching game

THE STORY MAKER'S PICTURE DICTIONARY 1.10

Everyday objects are illustrated individually on the same page there is a larger picture of the environment from which the objects might have been taken. The child may, using the vocabulary provided, begin to write stories using the names of the objects and the situations presented

HOW TALL AM I? .60

Twleve individual record cards which may be displayed in the classroom or at home to encourage children to measure and watch their growth. Purchased individually each card is ten cents. There are nine spaces on each card and each space has three spaces for dates and height record

FIVE FEET HINGED SCALE .95

May be attached to a door way or to any wall. It will encourage children to measure each other and work out mathematical comparisons. Five foot long strips are hinged together to make the ruler portable

GEOMETRY FOR PRIMARY GRADES 1.25

125 page workbooks to be used as an aid in the teaching of Geometry. Book 1 and Book 2 are available as well as the teachers' manuals for each. The price for each is $1.25

FOUNDATION NUMBER BOOKS 1.00

Five little workbooks with mathematical problems to be completed

NOW WE WRITE .95

Workbook for practice in ball and stick printing. Good as a brush up for teacher and parent as well as its obvious worth as a copy book for the child

SOUND PHONICS 3.50

Excellent teacher manual for introducing sounds to young children. Contains two small records to be used as control

A SPELLING WORKBOOK .60

Contains excellent word lists isolating phonograms. It may be used as is by the child or used as a guide to preparing individual work where special emphasis may be required

MONTESSORI IN THE HOME .60

Published by the Jerome Study Group this "preliminary study" gives many helpful hints concerning application of Montessori principles in the home

CHILD'S CHAIR 3.00

Special design slat or fiber seat ideal for school or home. Natural lacquer or red finish

CHILD'S ROCKER 4.00

As above, this child size rocker can be an ideal addition to the library corner at school or in the family living room

PEGS AND NUMBERS 1.15

Cut out numerals with holes into which the quantity of pegs fits. Good for building number concepts it has a built in control of error

COMMON OBJECT BOX 1.25

Plastic box containing miniature household items for word matching

HOUSEHOLD MINIATURES 1.80

Slightly larger, this set of four miniatures to be used in mystery bag or in common object box

SMALL PLASTIC BOX .20

Hinged lid affords practice in manipulative dexterity. The box is ideal for any number of classroom uses such as for picture matching, object boxes, etc. The clear plastic enables child to see through

LARGE PLASTIC BOX .32

Slightly larger version of above

TRANSPORTATION FLEET OF BIG TRUCKS 55.00

For pushing, pulling and riding, they are just the right size. The set includes a van, a transfer, a big bus, and a fire engine. They are the sturdiest and provide a normalizing influence in the classroom

SCIENCE BOOK-LAB SERIES 3.95

A selection of book-labs which contain complete units for various science experiments. Especially recommended are: 1) Air Experiments, 2) Chemistry, 3) Jets and Rockets, 4) Magnets, and 5) Math Shapes and Seeds. The instruction book which accompanies each book-lab structures the experiments so that they may be carried on either at home or in school

BALLADS FOR THE AGE OF SPACE 3.95

LP record of space songs which are informative as well as entertaining. There is a second record of experiment songs

LARGE MOVEABLE ALPHABET 5.00

SMALL MOVEABLE ALPHABET 6.00

Set of 12 of each letter and a box for sorting and presenting the alphabets. Available in red, blue, yellow or green

ED-U-CARDS OF NATURE 1.00

Sea Shells, Butterflies and Moths, or Rocks and Minerals, each box contains 54 full color photo cards with a story description on each. Buy two sets for picture matching

CRAYONS 1.50

A set of 40 child size crayons which will not melt. Ideal for color identification as well as a natural creative outlet

STAND FOR THESE CRAYONS .25

Circular stand for one of each of the colors of the crayons above

PENCIL HOLDERS 1.00

Set of three brightly colored triangle and parallelogram pencil holders made specially to accommodate the three pencils used for the metal inset presentation

APRON 1.80

Specially designed so that the child can fasten it himself in the front. It comes in red, blue, green, yellow, or pink plastic

PRACTICAL LIFE KIT 4.50

Set of eight items which include pail, broom, mop, dust pan and brush, chamois, sponge, and duster which are child size and can be effectively used both at home and in the classroom

BRUSHES 1.75

These brushes are ideal for shoe polish kits and/or table scrubbing. The set of five brushes can be broken up and used in any number of ways

LOOFAH BATH MITT 2.25

Japanese loofah design incorporated in a terry cloth mitt for the child's bath. Extremely valuable to increase tactile sensitivity

LOOFAH SCRUBBY 1.80

With tactility in mind we offer this delightful bath companion. A duck or fish which puffs up and floats is pleasant and helpful developmentally

SMALL PIECES OF LOFFAH .25

PITCHER .90

Italian ceramic pitcher, beautiful of design and child size. An important element in the exercises of practical life

BALANCE BOARD 9.75

Designed for satisfying the child's need for improving muscular coordination. Extremely attractive and so constructed to provide either a wide or narrow path for walking

TREE PUZZLE 5.98

Italian designed of pressed paper to avoid possibility of warping. These puzzles are knobbed and can be used for vocabulary building as well as in advanced classes for Botany

LEAF PUZZLE 5.98

Same as above

FLOWER PUZZLE 5.98

Same as above

ANIMAL LOTTO 1.95

Simply designed cards for matching. The control card may be cut up and there is ample room for labeling for a further exercise in reading

GARDEN LOTTO 1.95

Same as above with beautifully designed vegetable and flower pictures

PICTURE LOTTO 1.95

Same as above with common objects pictured

FIRST COUNTING 2.40

May be played as designed, as a counting game, or the control may be cut up to be used as a matching game which has number concepts built in

LARGE PICTURE LOTTO 2.40

Similar to the small picture lotto above but with more cards to be matched

COLOR BALLOONS 1.95

A step beyond color matching, this is for the young sophisticate who knows his colors well

CAR PUZZLE 2.25

Small knobbed pieces which fit into a control board. Obvious value is practice in cortical opposition

TRAFFIC PUZZLE 3.25

Same as above with traffic objects

FARM ANIMALS PUZZLE 3.25

Same as above with farm animals

OBJECTS AND ANIMALS PUZZLE 3.25

COMMON OBJECTS 3.25

PICTURE DOMINOES 1.00

Simply designed laminated cardboard dominoes which aid the child in picture discrimination and vocabulary building

SAND COMBS .92

Set of three sand combs designed for use in outdoor sandboxes

SAND TOOLS 1.50

Set of four sand tools of unpainted wood to be used in sandboxes. Good size for exercise of grasp and cortical opposition

GARDEN TOOLS 4.75

Set of five garden tools of sturdy design and a set of four packets of garden seeds. Well constructed to be used for gardening

PRE-SCHOOL TESTING

A survey of the experimental literature involving pre-school education particularly the work conducted at the Institute for Developmental Studies of the Department of Psychiatry at New York Medical College, by Martin Deutsch, Ph.D., the Director, indicates the following general testing program.

1. General Intelligence.

The Stanford-Binet Form L-M is a measure of general intellectual ability. It has a number of advantages in that the verbal items are similar in content to several of the language tests currently employed by such groups as the Institute for Developmental Studies on older children.

2. Language.

(a) The Peabody Picture Vocabulary has been selected by the Institute for Developmental Studies as a receptive language measure, with the instructions modified to permit terminating at 7 out of 10 errors rather than 6 out of 8.

(b) The Storytelling subtest from the Reading Prognosis Test can be used as an experimental measure of expressive language. The four card version should be applicable to the pre-school sample, and an attempt should be made to participate in data evaluation and test administration with other groups, particularly the Institute for Developmental Studies.

3. Perception and Conceptual Ability.

(a) The Columbia Mental Maturity Scale, a test of perceptual-conceptual ability which yields an IQ.

(b) The Boston University Speech Sound Test to estimate ability to discriminate among speech sounds in very young children.

(c) The Wepman Test of Auditory Discrimination for children at later developmental stages.

There is no lack of research in the field of pre-school testing. The Brookhaven Project should serve as an ideal population for evaluation of the various tests.

MONTHLY EVALUATION REPORT

Child's Name ______________________ Age ____ For the period ________

Teacher's Name ______________________ to ________

Behavior Response to discipline Ability to follow directions Interpersonal relations with teachers Interpersonal relations with other students	
Motor Coordination Gait Ability to balance self Eye-hand coordination Ability to climb Use of pencil, scissors, etc.	
Work Habits Ability to wait through a teacher presentation Handling of materials Completion of cycle of work with materials	
Language Intelligible - unintelligible Speaks in simple words, sentences, etc. Talks a great deal - not at all, etc.	
Personal Care Eating habits Dressing habits Toilet habits	
Special Comments Degree of competence	

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Black
Blue
Green
white
Yellow

CONCLUSION

Through the Montessori philosophy one can develop children who are proud of themselves and their environment, sensitive to art and to the needs of others, children prepared to become adults with close ties to their communities and their country. The Montessori philosophy is not confined within middle-class blinders but has great respect for the importance of each child, for the value of many approaches to life, for the beauty that can be found in poor circumstances, in quiet rural life, in manual labor.

Through study of Montessori's philosophy we can guard against the danger of "processing" our children to take their places in a middle-class assembly line devoted to turning out semi-educated college graduates without a sense of self or of vocation. There is room in the Montessori system for the child with intellectual interests or outstanding intelligence, but there is also room for the slow child, the retarded child, the socially disadvantaged child, the quiet child, the average child.

Since nature requires about 18 years to turn a helpless newborn into a man, we must not expect to succeed overnight! However, we must make a start in such a way that our infant will have the possibility of growing into an adult, not perishing along the way. Montessori has a great deal to tell us that is of inestimable value in our work--let us listen to her and act accordingly.